

Final
ENVIRONMENTAL ASSESSMENT
FOR THE
CONSTRUCTION AND OPERATION OF AN INDOOR SMALL ARMS RANGE
AT NIAGARA FALLS AIR RESERVE STATION, NEW YORK



AUGUST 2009

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FINAL

**FINDING OF NO SIGNIFICANT IMPACT (FONSI)/
FINDING OF NO PRACTICABLE ALTERNATIVE (FONPA)**

**ENVIRONMENTAL ASSESSMENT FOR THE
CONSTRUCTION AND OPERATION OF AN INDOOR SMALL ARMS RANGE
AT NIAGARA FALLS AIR RESERVE STATION, NEW YORK**

Pursuant to the Council on Environmental Quality's regulations for implementing procedural provisions of the National Environmental Policy Act (NEPA) (40 Code of Federal Regulations [CFR] 1500–1508), U.S Air Force (USAF) regulations in 32 CFR Part 989, and Department of Defense Directive 6050.1, the 914th Airlift Wing (914 AW) has prepared a Revised Environmental Assessment (EA) to identify potential effects associated with constructing and operating an indoor small arms firing range at Niagara Falls Air Reserve Station (ARS), New York. The Revised EA is incorporated by reference into this Finding of No Significant Impact (FONSI)/Finding of No Practicable Alternative (FONPA).

INTRODUCTION

The 914 AW is an Air Force Reserve Command (AFRC) unit, and is the host unit at Niagara ARS, New York. The major tenant at Niagara Falls ARS is the 107th Airlift Wing (107 AW) of the New York Air National Guard (NYANG). The 107 AW is an associate wing to the 914 AW.

The 914 AW proposes to construct and operate an indoor small arms range at Niagara Falls ARS. The Proposed Action, alternatives to the Proposed Action, and the No Action Alternative are addressed in the Revised EA. A Draft EA was completed for the same Proposed Action and alternatives in April 2009, but the proposed site was revised after the Draft EA was issued for public review on 20 May 2009. This necessitated the preparation of a Revised EA. Changes to the proposed site include the relocation of the parking area to comply with force protection standards.

PURPOSE OF AND NEED FOR THE PROPOSED ACTION

The purpose of the Proposed Action is to facilitate proficiency training by constructing at Niagara Falls ARS a 21-firing-point, live-fire, indoor small arms range that meets all mandatory weapons training requirements for military personnel. Presently, live-fire training is conducted at an existing offsite outdoor range. An exorbitant amount of time is wasted transporting personnel to and from this offsite range. The number of firing line points available at the existing range is inadequate to satisfy the volume of personnel associated with monthly training requirements. Personnel are unable to qualify when temperatures or weather conditions fall below allowable requirements. Cumulatively, these factors result in the loss of several months of weapons qualifying time each year. Construction of a live-fire indoor small arms range at Niagara Falls ARS would allow installation personnel to meet all weapons certification requirements.

DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

Proposed Action. 914 AW proposes to construct a 21-firing-point, live-fire, indoor small arms range at Niagara Falls ARS under the Military Construction (MILCON) program. The facility would have the capability to provide training for security forces and deploying personnel of the 914 AW and 107 AW. The facility would be used by other military components on an "as-available" basis. The facility would provide support space for range supplies and equipment and for target storage and repair. Construction would include potable water, sanitary sewer, storm sewer, natural gas, primary electric, and

communications to service the facility. Construction would also include adequate parking for privately owned and government-owned vehicles. Construction would comply with all applicable fire and safety codes. The proposed site is undeveloped property in the northeastern quadrant of the installation north of the Civil Engineering complex.

An updated wetland delineation for Niagara Falls ARS was completed in 2008 and a jurisdictional determination from the U.S. Army Corps of Engineers (USACE) was issued on 10 November 2009. A 1.68-acre Federal jurisdictional wetland was delineated adjacent to and west of the site identified for the Proposed Action. The southern portion of the proposed site is bisected by a tributary of the 1.68-acre wetland; the tributary is a drainage channel that is classified as a jurisdictional waters of the United States by the USACE.

Alternative Site. The alternative to the Proposed Action would be to use a site for the range at a location on undeveloped property between the 914 AW and 107 AW cantonment areas in the central part of the installation.

No Action Alternative. Under the No Action Alternative, there would be no change from existing conditions at the installation. The 914 AW would not construct an indoor small arms range. Weapons training for security forces and deploying personnel would continue to be conducted offsite, which would result in the loss of several months of weapons qualifying time each year.

ALTERNATIVES CONSIDERED BUT NOT EVALUATED FURTHER

Four alternatives were considered but eliminated from further analysis. The first alternative eliminated from further analysis would be to construct an indoor small arms range on public or private property closer to Niagara Falls ARS than the existing offsite outdoor range. This alternative, while an improvement upon the present situation, fails to eliminate the loss of time and additional expense of transporting personnel to and from an offsite facility. In addition, the USAF discourages the acquisition of additional property and the acquisition process could substantially delay project execution and escalate project cost. The second eliminated alternative would be to construct a smaller indoor small arms range (less than the 21 firing points included under the Proposed Action) on Niagara Falls ARS at the proposed site. This alternative would not meet the volume of Niagara Falls ARS personnel associated with monthly training requirements and therefore would fail to meet mission requirements. The third eliminated alternative would be to construct an outdoor small arms range on Niagara Falls ARS at the proposed site. This alternative, while also an improvement upon the present situation, fails to eliminate the loss of weapons training time caused by inclement weather conditions. The fourth eliminated alternative would be to convert an existing facility to an indoor small arms range or demolish an existing facility and reuse the site to construct the range. This alternative supports the principal of sustainability. However, there are no facilities available for conversion or are there any facilities scheduled for demolition with an adequate site to support the proposed range.

SUMMARY OF ANTICIPATED ENVIRONMENTAL IMPACTS ASSOCIATED WITH THE PROPOSED ACTION

Analyses performed in the EA addressed potential effects on noise, land use, air quality, biological resources, safety, water and soil resources, and hazardous materials and waste. Short-term, minor, direct adverse effects resulting from construction activities would affect the noise environment, air quality, safety, water and soil resources, biological resources, and hazardous materials and wastes. Adverse effects associated with construction activities would be localized to the immediate area of work and would subside following the end of construction.

Excavation or trenching could be required to install utilities at the site of the Proposed Action; these activities could have a short-term negligible impact on the drawdown of the water table in the vicinity of the site of the Proposed Action should BMPs not be applied.

No direct effects on the 100-year floodplain, wetlands, threatened and endangered species, or cultural resources would be expected. The proposed facility would not be constructed within the floodplain or delineated wetlands; therefore, no impacts on the hydric soils and hydrophytic vegetation would be expected for the wetland directly west of the site of the Proposed Action. Short and long-term indirect effects on the wetland could occur from stormwater runoff; however, proper implementation of Best Management Practices (BMPs) and adherence to the Stormwater Pollution Prevention Plan (SWPPP) as part of the project design would reduce adverse effects on the wetland to negligible.

Minor, direct, adverse effects on the wetland tributary, a jurisdictional waters of the United States, would occur from construction of an access road and installation of a culvert to convey flow in the drainage channel. Effects on the wetland and waters of the United States would not be significant based on proper implementation of BMPs as outlined in Section 3.6.3.1 of the Revised EA. These BMPs include flagging the wetland and waters of the United States boundaries, installing water quality control features and erosion-control structures, establishing buffers surrounding the wetland and waters of the United States, and following policies and procedures as detailed in the Niagara Falls ARS erosion and sediment control plan and SWPPP. Any necessary agency coordination and required permits would be acquired prior to commencing any ground-breaking construction activities.

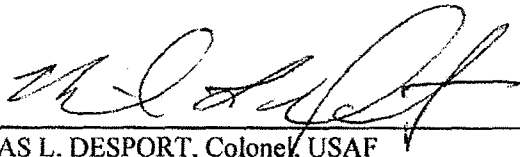
The analysis presented in the Revised EA indicates that the operation of the proposed facility would have no significant direct, indirect, or cumulative effects on the quality of the natural or human environment.

CONCLUSIONS

Public Review and Interagency Coordination. The USAF initiated the Interagency and Intergovernmental Coordination for Environmental Planning (IICEP) process for this Proposed Action on 30 June 2010, in accordance with USAF policy. A 30-day public and agency review of the Revised Draft EA and Draft FONSI/FONPA occurred in accordance with NEPA and USAF regulations. A Notice of Availability for this action was published in *The Niagara Gazette* on 30 June 2010, the Revised Draft EA and Draft FONSI/FONPA were made available at the Niagara Falls Public Library, and copies of the documents were distributed to the addresses on the IICEP distribution list.

Finding of No Practicable Alternative. It is USAF policy to avoid constructing new facilities within areas containing wetlands, where practicable. Wetland impacts are reduced to the maximum extent possible through project design and implementation of environmental protection measures. However, the Proposed Action could indirectly impact a wetland area. Implementation of BMPs, where appropriate, could minimize the potential for indirect impacts on the wetland. Reasonable alternatives were considered, but no other alternatives met the operational requirements or possible expansion needs of the 914 AW. Specifically, the alternative site was viable when the original Draft EA was prepared in May 2009; however, the site was selected in March 2010 as the preferred location for the proposed Civil Engineering building to be completed in 2013 or 2014. Therefore, the alternative site is no longer a viable alternative to the Proposed Action, but is analyzed in detail in the Revised EA to provide continuity with the original Draft EA. In addition, the alternative site does not have adequate space for future facility expansion.

Pursuant to Air Force Instruction 32-7064, *Integrated Natural Resources Management*, and the authority delegated by Secretary of the Air Force Order 791.1, *Environment*, and taking the above information into account, I find that there is no practicable alternative to this action and that the Proposed Action includes all practicable measures to minimize harm to the environment. This decision has been made after taking into account all submitted information, and considering a full range of practical alternatives that would meet project requirements and are within the legal authority of the USAF.



NICHOLAS L. DESPORT, Colonel, USAF
Deputy Director, Installations and Mission Support

20 Aug 10
Date

Finding of No Significant Impact. I conclude that the environmental effects of the proposed construction and operation of an indoor small arms range at Niagara Falls ARS are not significant, that preparation of an Environmental Impact Statement is not necessary, and that a FONSI is appropriate. The preparation of the EA is in accordance with NEPA, Council on Environmental Quality regulations. And 32 CFR Part 989, as amended.



FOR

ALLAN L. SWARTZMILLER, Colonel, USAFR
Commander

27 Aug 10
Date

Attachment: Environmental Assessment

ABBREVIATIONS AND ACRONYMS

µg/L	micrograms per liter	DNL	Day-Night Average A-weighted Sound Level
µg/m ³	micrograms per cubic meter	DRMO	Defense Reutilization and Marketing Office
107 AW	107th Airlift Wing	EA	Environmental Assessment
914 AW	914th Airlift Wing	EIS	Environmental Impact Statement
ACM	asbestos-containing material	EO	Executive Order
AFI	Air Force Instruction	ERP	Environmental Restoration Program
AFRC	Air Force Reserve Command	ESA	Endangered Species Act
AORCENTAF	Area of Operations Central Air Force Command	ETL	Engineering Technical Letter
AQCR	air quality control region	FEMA	Federal Emergency Management Agency
ARS	Air Reserve Station	FIRM	Flood Insurance Rate Map
AST	aboveground storage tank	FONPA	Finding of No Practicable Alternative
BASH	Bird/Wildlife Aircraft Strike Hazard	FONSI	Finding of No Significant Impact
BMP	Best Management Practice	FPPA	Farmland Protection Policy Act
CAA	Clean Air Act	HAP	hazardous air pollutant
CEQ	Council on Environmental Quality	HAZMART	hazardous materials pharmacy
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	IAP	International Airport
CFR	Code of Federal Regulations	ICRMP	Integrated Cultural Resources Management Plan
CM	corrective measures	IICEP	Interagency and Intergovernmental Coordination for Environmental Planning
CO	carbon monoxide		
CO ₂	carbon dioxide		
CWA	Clean Water Act		
dba	A-weighted decibels		

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LBP	lead-based paint	PM _{2.5}	particulate matter equal to or less than 2.5 microns in diameter
LGLFRO	Lower Great Lakes Fishery Resources Office	POL	petroleum, oil, and lubricant
LTM	long-term monitoring	ppm	parts per million
mg/m ³	milligrams per cubic meter	PSD	Prevention of Significant Deterioration
MILCON	Military Construction	RCRA	Resource Conservation and Recovery Act
mm	millimeter	SAP	satellite accumulation point
NAAQS	National Ambient Air Quality Standards	SARA	Superfund Amendments and Reauthorization Act
NEPA	National Environmental Policy Act	SHPO	State Historic Preservation Office
NFA	no further action	SIP	State Implementation Plan
NFIAQCR	Niagara Frontier Intrastate 162 Air Quality Control Region	SO _x	sulfur oxide
NO ₂	nitrogen dioxide	SPCC	Spill Prevention Control and Countermeasures
NO _x	nitrogen oxide	SPDES	State Pollutant Discharge Elimination System
NOA	Notice of Availability	SWPPP	Storm Water Pollution Prevention Plan
NRCS	National Resources Conservation Service	TMDL	Total Maximum Daily Load
NYANG	New York Air National Guard	tpy	tons per year
NYCRR	New York Code of Rules and Regulations	U.S.C.	United States Code
NYSDEC	New York State Department of Environmental Conservation	USACE	U.S. Army Corps of Engineers
O ₃	ozone	USAF	U.S. Air Force
OSHA	Occupational Safety and Health Administration	USEPA	U.S. Environmental Protection Agency
Pb	lead	USFWS	U.S. Fish and Wildlife Service
PM ₁₀	particulate matter equal to or less than 10 microns in diameter	UST	underground storage tank
		VOC	volatile organic compound

COVER SHEET

FINAL ENVIRONMENTAL ASSESSMENT FOR THE CONSTRUCTION AND OPERATION OF AN INDOOR SMALL ARMS RANGE AT NIAGARA FALLS AIR RESERVE STATION, NEW YORK

Responsible Agencies: 914th Airlift Wing (914 AW), Niagara Falls Air Reserve Station (ARS), New York.

Affected Location: Niagara Falls ARS, New York.

Proposed Action: Construct an Indoor Small Arms Range at Niagara Falls ARS.

Report Designation: Final Environmental Assessment (EA).

Abstract: The purpose of the Proposed Action is to facilitate training by constructing and operating a 28-firing-point live-fire indoor small arms range at Niagara Falls ARS that meets all necessary mandatory weapons training requirements for military personnel in accordance with Air Force Instruction (AFI) 36-2226, *Combat Arms Program*. The facility would be designed and constructed in accordance with Engineering Technical Letter (ETL) 08-11, *Small Arms Range Design and Construction*.

Under the No Action Alternative, Niagara Falls ARS personnel would not construct an indoor small arms range at Niagara Falls ARS and would continue to train at an existing offsite range they are presently using. This alternative would not satisfy USAF mission and emergency response requirements at Niagara Falls ARS.

The EA evaluates the potential environmental consequences of the Proposed Action, one alternative considered as viable, and the No Action Alternative on the following 10 general resource area impact topics: noise, land use, air quality, safety, geological resources, water resources, biological resources, socioeconomic resources and environmental justice, infrastructure, and hazardous materials and wastes.

Written comments and inquiries regarding this document should be directed to: 914 MSG/CEV, Niagara Falls ARS, 2405 Franklin Drive, Niagara Falls, New York 14304-5063.

Privacy Advisory

Your comments on this document are requested. Letters or other written or oral comments provided may be published in the EA. As required by law, comments will be addressed in the EA and made available to the public. Any personal information provided will be used only to identify your desire to comment on this document or to fulfill requests for copies of the EA or associated documents. Private addresses will be compiled to develop a mailing list for those requesting copies of the EA. However, only the names of the individuals making comments and the specific comments will be disclosed, as applicable. Personal home addresses and phone numbers will not be published in the EA.

Final

ENVIRONMENTAL ASSESSMENT

FOR THE

CONSTRUCTION AND OPERATION OF AN INDOOR SMALL ARMS RANGE
AT NIAGARA FALLS AIR RESERVE STATION, NEW YORK

914TH AIRLIFT WING
MISSION SUPPORT GROUP/ENVIRONMENTAL
2405 Franklin Drive
Niagara Falls, New York 14304-5063

AUGUST 2009

**FINAL ENVIRONMENTAL ASSESSMENT
FOR THE CONSTRUCTION AND OPERATION OF AN INDOOR SMALL ARMS RANGE
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TABLE OF CONTENTS

ABBREVIATIONS AND ACRONYMS.....	INSIDE FRONT COVER
1. PURPOSE OF AND NEED FOR THE PROPOSED ACTION.....	1-1
1.1 INTRODUCTION	1-1
1.2 PURPOSE AND NEED	1-1
1.3 NIAGARA FALLS ARS LOCATION AND BACKGROUND	1-1
1.4 SUMMARY OF KEY ENVIRONMENTAL COMPLIANCE REQUIREMENTS	1-4
1.4.1 National Environmental Policy Act	1-4
1.4.2 Integration of Other Environmental Statutes and Regulations	1-4
1.5 INTERAGENCY COORDINATION AND PUBLIC INVOLVEMENT	1-5
1.6 ORGANIZATION OF THIS DOCUMENT	1-5
2. DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES	2-1
2.1 INTRODUCTION	2-1
2.2 SELECTION CRITERIA	2-1
2.3 PROPOSED ACTION	2-1
2.4 ALTERNATIVES	2-2
2.4.1 Construct Indoor Small Arms Range at Site B on Niagara Falls ARS.....	2-3
2.4.2 No Action Alternative	2-3
2.4.3 Alternatives Considered but Eliminated from Detailed Analysis	2-4
2.4.4 Preferred Alternative	2-5
3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES.....	3-1
3.1 PRELIMINARY IMPACT ASSESSMENT EXCLUSIONS	3-1
3.1.1 Geological Resources	3-2
3.1.2 Cultural Resources	3-2
3.1.3 Socioeconomics.....	3-2
3.1.4 Environmental Justice	3-3
3.1.5 Infrastructure	3-3
3.1.6 Traffic and Transportation.....	3-3
3.2 NOISE.....	3-3
3.2.1 Definition of the Resource	3-3
3.2.2 Description of the Affected Environment	3-5
3.2.3 Environmental Consequences	3-5
3.3 LAND USE	3-8
3.3.1 Definition of the Resource	3-8
3.3.2 Description of the Affected Environment	3-8
3.3.3 Environmental Consequences	3-11
3.4 AIR QUALITY	3-13
3.4.1 Definition of the Resource	3-13
3.4.2 Description of the Affected Environment	3-15
3.4.3 Environmental Consequences	3-16

TABLE OF CONTENTS (CONTINUED)

3.5	SAFETY	3-20
3.5.1	Definition of the Resource	3-20
3.5.2	Description of the Affected Environment	3-20
3.5.3	Environmental Consequences	3-21
3.6	WATER AND SOIL RESOURCES	3-22
3.6.1	Definition of the Resource	3-22
3.6.2	Description of the Affected Environment	3-24
3.6.3	Environmental Consequences	3-26
3.7	BIOLOGICAL RESOURCES	3-30
3.7.1	Definition of the Resource	3-30
3.7.2	Description of the Affected Environment	3-30
3.7.3	Environmental Consequences	3-37
3.8	HAZARDOUS MATERIALS AND WASTE.....	3-40
3.8.1	Definition of the Resource	3-40
3.8.2	Description of the Affected Environment	3-41
3.8.3	Environmental Consequences	3-46
4.	CUMULATIVE IMPACTS	4-1
4.1	CUMULATIVE EFFECTS	4-1
4.1.1	Past Development.....	4-1
4.1.2	Current Development	4-1
4.1.3	Reasonably Foreseeable Development.....	4-2
4.1.4	Cumulative Effects by Resource Topic.....	4-2
4.2	COMPATIBILITY OF THE PROPOSED ACTION AND ALTERNATIVES WITH THE OBJECTIVES OF FEDERAL, REGIONAL, STATE, AND LOCAL LAND USE PLANS, POLICIES, AND CONTROLS.....	4-4
4.3	RELATIONSHIP BETWEEN SHORT-TERM USES OF MAN’S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY	4-4
4.4	IRREVERSIBLE OR IRRETRIEVABLE COMMITMENT OF RESOURCES.....	4-4
5.	LIST OF PREPARERS.....	5-1
6.	REFERENCES	6-1

APPENDICES

- A. Applicable Laws, Regulations, Policies, and Planning Criteria**
- B. Interagency and Intergovernmental Coordination for Environmental Planning (IICEP)
Materials**
- C. Public Involvement**
- D. Calculations to Support the Air Quality Impact Analyses**

FIGURES

1-1. Niagara Falls ARS Vicinity Map	1-2
1-2. Niagara Falls ARS Installation Map	1-3
2-1. Proposed Indoor Small Arms Range Locations at Niagara Falls ARS	2-2
2-2. Existing Conditions at Site A	2-3
2-3. Existing Conditions at Site B	2-4
3-1. Existing Land Use at Niagara Falls ARS	3-10
3-2. Water Resources at Niagara Falls ARS.....	3-27
3-3. Environmental Restoration Program Sites at Niagara Falls ARS	3-45

TABLES

3-1. Typical Outdoor Noise Levels.....	3-4
3-2. Predicted Noise Levels for Construction Equipment	3-5
3-3. National and State Ambient Air Quality Standards.....	3-14
3-4. Local and Regional Air Emissions Inventory for 2007	3-15
3-5. Reported Air Emissions and Potential to Emit Values for Niagara Falls ARS	3-16
3-6. Conformity <i>de minimis</i> Emissions Thresholds	3-17
3-7. Estimated Air Emissions Resulting from Construction Activities	3-18
3-8. Estimated Air Emissions Resulting from Operational Activities	3-18
3-9. Native Bird Species Observed at Niagara Falls ARS during 2007 Breeding Season (May through August) and November 1997 to July 1999.....	3-32
3-10. Threatened and Endangered Species Identified or Potentially Occurring on Niagara Falls ARS	3-35
3-11. Environmental Restoration Program Sites on Niagara Falls ARS.....	3-44
4-1. Cumulative Effects on Resources	4-3

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1. Purpose of and Need for the Proposed Action

1.1 Introduction

The 914th Airlift Wing (914 AW) is an Air Force Reserve Command (AFRC) unit and is the host unit at Niagara Falls Air Reserve Station (ARS), New York (see **Figure 1-1**). The 914 AW is assigned 12 C-130H transport aircraft that perform diverse roles, including airdrop of supplies, airlift support, aeromedical missions, and natural disaster relief missions. The major tenant at Niagara Falls ARS is the 107th Airlift Wing (107 AW) of the New York Air National Guard (NYANG), an associate wing to the 914 AW.

The Proposed Action addressed by this Environmental Assessment (EA) is the construction and operation of an indoor small arms range at Niagara Falls ARS. This EA addresses potential environmental consequences associated with the Proposed Action, one viable alternative to the Proposed Action, and the No Action Alternative. If the analyses presented in this EA indicate that implementation of the Proposed Action would not result in significant environmental impacts, a Finding of No Significant Impact (FONSI) would be prepared. A FONSI briefly presents reasons why a Proposed Action would not have a significant effect on the human environment and why an Environmental Impact Statement (EIS) is not necessary. If significant environmental issues are identified that cannot be mitigated to insignificance, an EIS would be prepared, or the Proposed Action would be abandoned and no action would be taken.

1.2 Purpose and Need

The purpose of the Proposed Action is to facilitate proficiency training by constructing a 28-firing-point live-fire indoor small arms range that meets all mandatory weapons training requirements for military personnel in accordance with Air Force Instruction (AFI) 36-2226, *Combat Arms Program* at Niagara Falls ARS (USAF 2003). Security Forces personnel are required to live-fire qualify approximately every 6 months. All deploying personnel to Area of Operations Central Air Force Command (AORCENTAF) are required to be live-fire qualified.

Presently, live-fire training is conducted at an existing offsite outdoor range. An exorbitant amount of time is wasted transporting personnel to and from this offsite range. The number of firing points available is inadequate to satisfy the volume of personnel associated with monthly training requirements. Adverse weather conditions (i.e., severe cold, extreme heat, heavy rain, and local lightning) can also limit the time available for military personnel to receive small arms proficiency training in order to meet qualification requirements in AFI 36-2226, *Combat Arms Programs* (USAF 2003). Temperatures in the vicinity of Niagara Falls ARS are often very cold, regularly dipping below 20° F in the winter (Niagara Falls State Park 2009). Cumulatively, these factors result in the loss of several months of weapons qualifying time each year. Construction of a live-fire indoor small arms range on Niagara Falls ARS would allow 914 AW to meet all weapons certification requirements for Security Forces and deploying personnel.

1.3 Niagara Falls ARS Location and Background

As shown on **Figure 1-1**, Niagara Falls ARS is in Niagara County in western New York, approximately 6 miles east of the City of Niagara Falls and 20 miles north of the City of Buffalo. Adjacent communities include the towns of Niagara, Lewiston, and Wheatfield; and the City of Niagara Falls. Niagara Falls International Airport (IAP) is directly south of and contiguous to the installation. As shown on **Figure 1-2**, the boundary between the airport and the installation generally coincides with the channel of Cayuga Creek, which flows from east to west, south of the installation flightline apron. The installation occupies 985 acres of land north of Niagara Falls IAP. Vehicular access to Niagara Falls ARS is provided through the Main Gate, off Lockport Road.

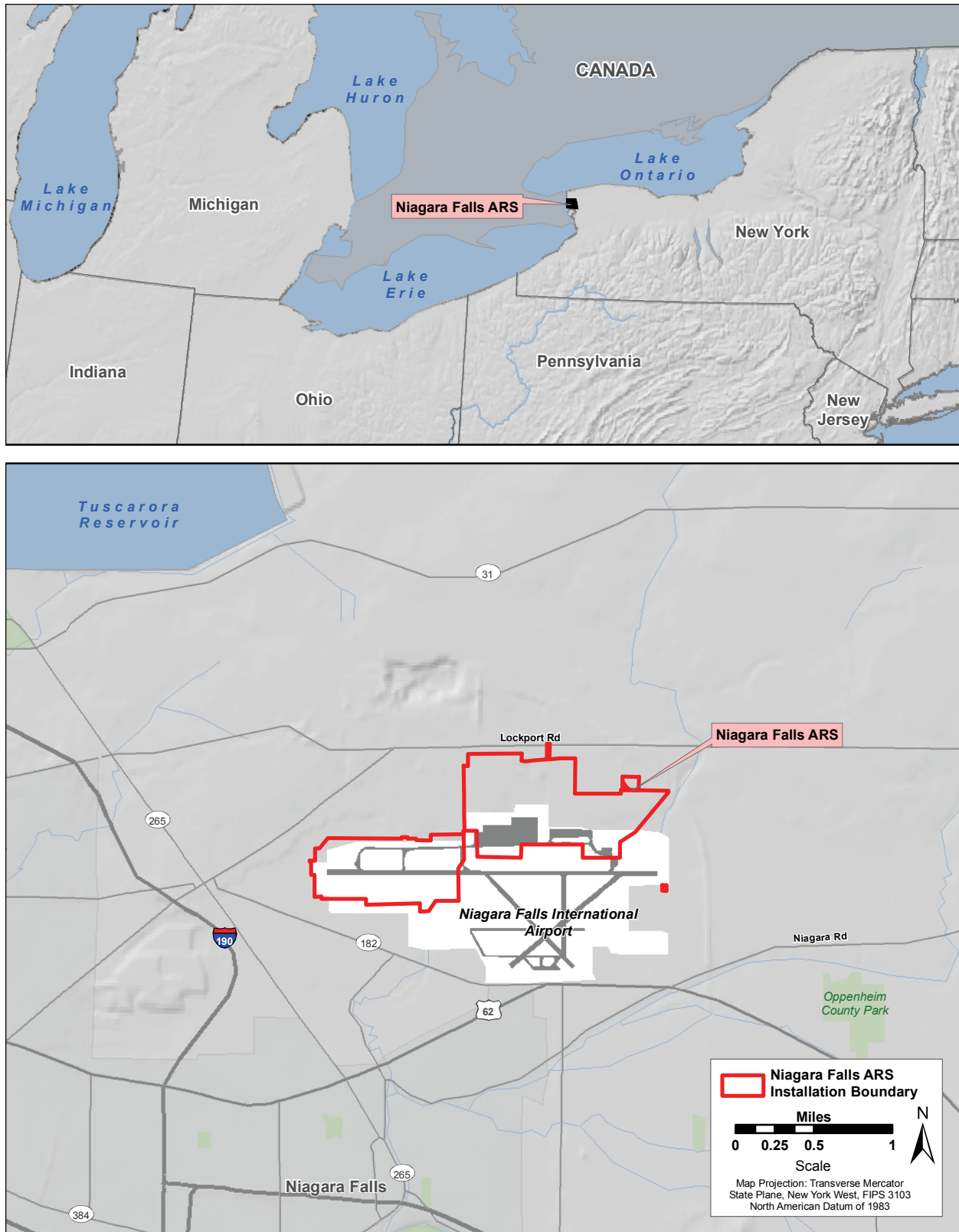
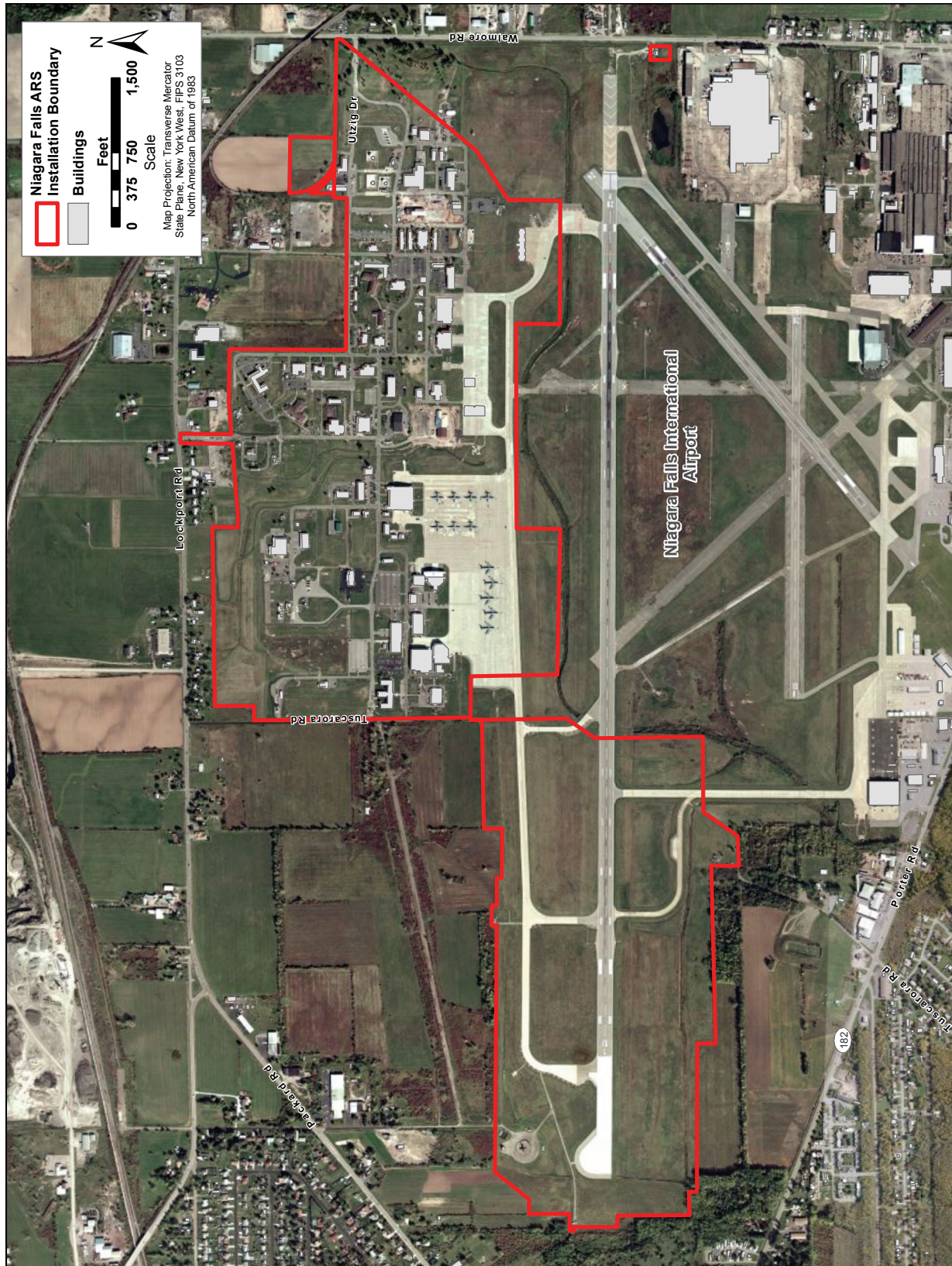


Figure 1-1. Niagara Falls ARS Vicinity Map



Sources: Imagery courtesy of ArcGIS Online Virtual Earth Maps Premium 2008; Installation Boundary and Buildings: Niagara Falls ARS, 2006.

Figure 1-2. Niagara Falls ARS Installation Map

1.4 Summary of Key Environmental Compliance Requirements

1.4.1 National Environmental Policy Act

The National Environmental Policy Act (NEPA) (42 United States Code [U.S.C.] Section 4321–4347) is a Federal statute requiring the identification and analysis of potential environmental impacts associated with proposed Federal actions before those actions are taken. The intent of NEPA is to help decisionmakers make well-informed decisions based on an understanding of the potential environmental consequences and take actions to protect, restore, or enhance the environment. NEPA established the Council on Environmental Quality (CEQ) that was charged with the development of implementing regulations and ensuring Federal agency compliance with NEPA. The CEQ regulations mandate that all Federal agencies use a prescribed, structured approach to environmental impact analysis. This approach also requires Federal agencies to use an interdisciplinary and systematic approach in their decisionmaking process. This process evaluates potential environmental consequences associated with a Proposed Action and considers alternative courses of action.

The process for implementing NEPA is codified in Title 40 of the Code of Federal Regulations (CFR), Parts 1500–1508, *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act*. The CEQ was established under NEPA to implement and oversee Federal policy in this process. The CEQ regulations specify that an EA be prepared to briefly provide evidence and analysis for determining whether to prepare a FONSI or whether the preparation of an EIS is necessary. The EA can aid in an agency's compliance with NEPA when an EIS is unnecessary and facilitate preparation of an EIS when one is required.

Air Force Policy Directive 32-70, *Environmental Quality*, states that the U.S. Air Force (USAF) will comply with applicable Federal, state, and local environmental laws and regulations, including NEPA. The USAF's implementing regulation for NEPA is its *Environmental Impact Analysis Process* that is detailed in 32 CFR Part 989, as amended.

1.4.2 Integration of Other Environmental Statutes and Regulations

To comply with NEPA, the planning and decisionmaking process for actions proposed by Federal agencies involves a study of other relevant environmental statutes and regulations. The NEPA process, however, does not replace procedural or substantive requirements of other environmental statutes and regulations. It addresses them collectively in the form of an EA or EIS, which enables the decisionmaker to have a comprehensive view of major environmental issues and requirements associated with the Proposed Action. According to CEQ regulations, the requirements of NEPA must be integrated “with other planning and environmental review procedures required by law or by agency so that all such procedures run concurrently rather than consecutively.”

This EA examines potential effects of the Proposed Action, one alternative considered as viable (Alternative Site B), and the No Action Alternative on 10 resource areas: noise, land use, air quality, safety, geological resources, water resources, biological resources, socioeconomic resources and environmental justice, infrastructure, and hazardous materials and wastes. These resource areas were identified as being potentially affected by the Proposed Action, and include applicable critical elements of the human environment whose review is mandated by Executive Order (EO), regulation, or policy. **Appendix A** contains examples of relevant laws, regulations, and other requirements that are often considered part of the analysis.

1.5 Interagency Coordination and Public Involvement

NEPA requirements help ensure that environmental information is made available to the public during the decisionmaking process and prior to actions being taken. The premise of NEPA is that the quality of Federal decisions will be enhanced if proponents provide information to the public and involve the public in the planning process.

The Intergovernmental Coordination Act and EO 12372, *Intergovernmental Review of Federal Programs*, require Federal agencies to cooperate with and consider state and local views in implementing a Federal proposal. AFI 32-7060 requires AFRC to implement a process known as Interagency and Intergovernmental Coordination for Environmental Planning (IICEP), which is used for the purpose of agency coordination. Through the IICEP process, the 914 AW will notify relevant Federal, state, and local agencies; and the surrounding communities of the action proposed and provide them sufficient time to make known their environmental concerns specific to the action.

The public involvement process also provides AFRC with the opportunity to cooperate with and consider state and local views in implementing this Federal proposal. The 914 AW will coordinate with agencies such as U.S. Environmental Protection Agency (USEPA); U.S. Fish and Wildlife Service (USFWS); and other Federal, state, and local agencies. **Appendix B** includes a copy of the letter mailed to the agencies for the Draft EA and the distribution list. A copy of the EA was sent to each person on the list and made available at the Niagara Falls Public Library to enhance the opportunity for public involvement.

A Notice of Availability (NOA) for the Draft EA and proposed FONSI was published in the *Niagara Gazette* on 20 May 2009. The published NOA is used to solicit comments and involve the local community in a manner that will support the decisionmaking process. Copies of the EA and proposed FONSI were available for review at the Niagara Falls Public Library. Comments received from the public and other Federal, state, and local agencies are addressed in this EA and are included in **Appendix C**.

1.6 Organization of this Document

This EA is organized into five sections. **Section 1** provides background information on Niagara Falls ARS, the purpose of and need for the Proposed Action, the location of the Proposed Action, a summary of environmental compliance requirements, a description of interagency coordination and community involvement, and an introduction to the organization of the EA. **Section 2** contains a detailed description of the Proposed Action, one viable alternative to the Proposed Action, a description of the No Action Alternative, and the identification of the preferred alternative. **Section 3** contains a characterization of the affected environment, or baseline environmental conditions, and addresses potential environmental consequences associated with the Proposed Action, the considered alternative (Alternative Site B), and the No Action Alternative. **Section 4** provides an analysis of the potential cumulative and other impacts. **Section 5** presents the preparers of the document. **Section 6** lists the reference documents used in the preparation of this EA. **Appendix A** includes a description of environmental laws, regulations, and EOs potentially applicable to the Proposed Action. **Appendix B** includes the IICEP letter and distribution list. **Appendix C** includes public involvement materials as they are developed throughout the course of the EA process. **Appendix D** includes the calculations used to support the air quality impact analysis (see **Section 3.4**).

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2. Description of the Proposed Action and Alternatives

2.1 Introduction

This section describes the Proposed Action and the alternatives considered. As discussed in **Section 1.4.1**, the NEPA process evaluates potential environmental consequences associated with a proposed action and considers alternative courses of action. Reasonable alternatives must satisfy the purpose of and need for a proposed action, which are defined in **Section 1.2**. In addition, CEQ regulations also specify the inclusion of a No Action Alternative against which potential effects can be compared. While the No Action Alternative would not satisfy the purpose of or need for the Proposed Action, it is analyzed in detail in accordance with CEQ regulations and provides a baseline against which action alternatives can be compared.

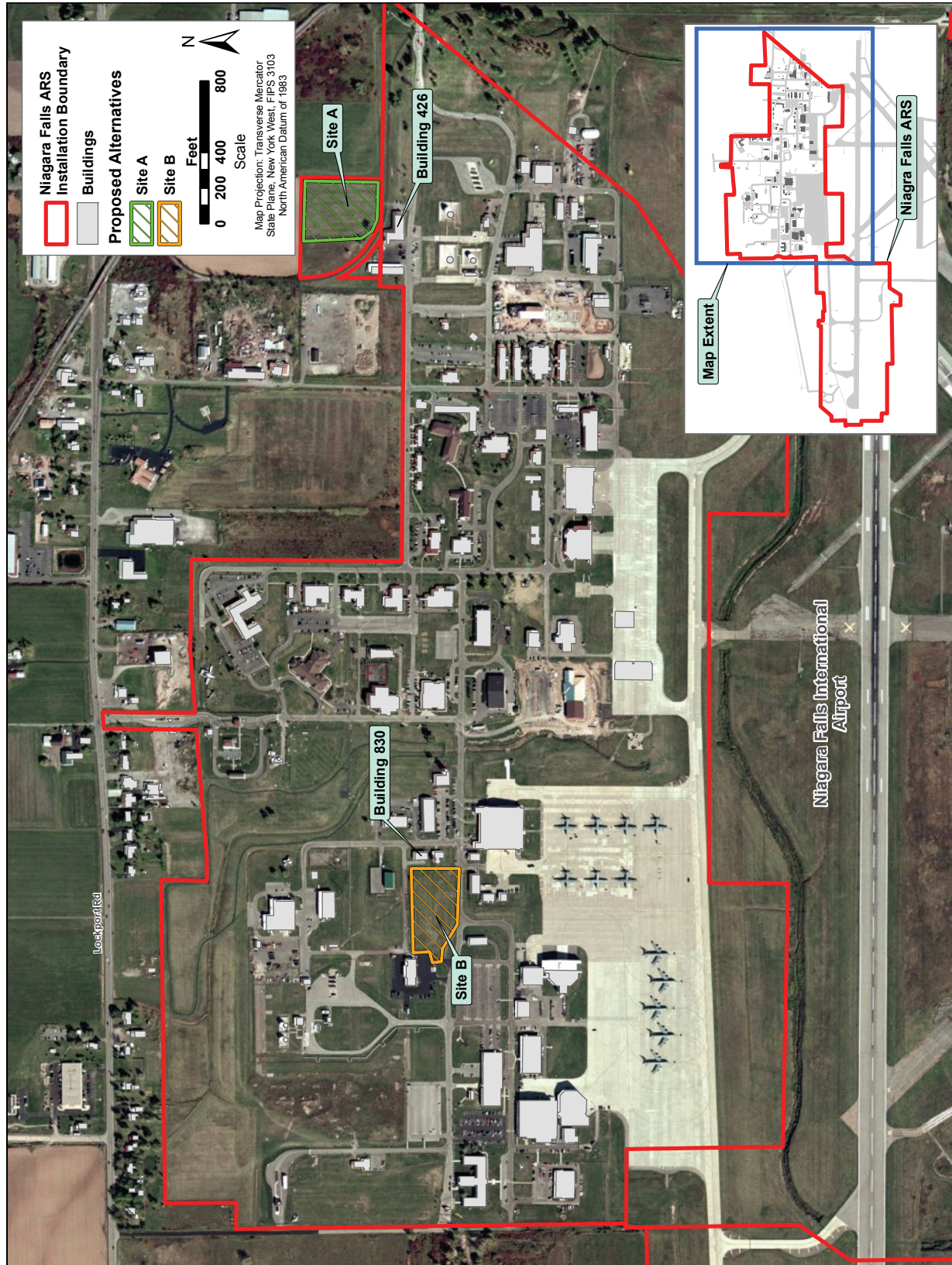
2.2 Selection Criteria

The development of reasonable alternatives involved discussions with Niagara Falls ARS installation personnel to identify the purpose and need of the action, potential alternative courses of action, range design considerations, potential locations, and management practices for achieving the purpose and need. Consistent with the intent of NEPA, this screening process focused on identifying a range of reasonable project-specific alternatives and, from that, developing proposed actions that could be implemented in the foreseeable future. Management alternatives deemed infeasible were not analyzed further (see **Section 2.4.3**).

2.3 Proposed Action

The Proposed Action is to construct and operate a 28-firing-point live-fire indoor small arms range at Niagara Falls ARS. The facility would be constructed under the Military Construction (MILCON) Program. The design of the facility would meet the requirements addressed in Engineering Technical Letter (ETL) 08-11, *Small Arms Range Design and Construction* (USAF 2008), and would be constructed to satisfy certification requirements for the M-16 series rifle, M-9 pistol, M-11 pistol, M-870 shotgun, M-240B machine gun, and M-249 automatic rifle (AFRC 2008). The facility would have the capability to provide adequate training for Security Forces personnel and deploying personnel to AORCENTAF. The facility would be utilized by other agencies (e.g., other branches of the U.S. military or civilian law enforcement agencies) on an “as-available” basis. The facility would provide support space for range supplies and equipment and for target storage and repair. Construction would include service for potable water, sanitary sewer, storm sewer, natural gas, primary electric, and communications to support the facility. Construction would also include adequate parking for privately owned and government-owned vehicles. Construction would comply with all applicable fire and safety codes. The Proposed Action would meet all applicable antiterrorism/force protection requirements.

Under the Proposed Action, the proposed facility would be constructed on the installation at Site A as shown in **Figure 2-1**. Site A is north of Building 426 on approximately 4.6 acres of land. The construction footprint is estimated to be approximately 2 acres based upon similar indoor small arms ranges constructed at Wright Patterson AFB and Westover Air Reserve Base. The orientation of the facility and supporting infrastructure would be determined by the construction contractor during the project design phase. **Figure 2-2** shows the existing condition of Site A.



Sources: Imagery courtesy of ArcGIS Online Virtual Earth Maps Premium 2008; Installation Boundary and Buildings: Niagara Falls ARS, 2006; Proposed Alternatives: eM Inc. 2009.

Figure 2-1. Proposed Indoor Small Arms Range Locations at Niagara Falls ARS



Figure 2-2. Existing Conditions at Site A

2.4 Alternatives

2.4.1 Construct Indoor Small Arms Range at Site B on Niagara Falls ARS

Under this alternative, the proposed facility would be constructed on the installation at Site B, as shown in **Figure 2-1**. Site B is west of Building 830, the Hazardous Waste Storage Building, on approximately 2 acres of land. The orientation of the facility and supporting infrastructure would be determined by the construction contractor during the project design phase. This alternative is viable and will be evaluated in detail in the EA. **Figure 2-3** shows the existing condition of Site B.

2.4.2 No Action Alternative

Under the No Action Alternative, there would be no change from existing conditions at the installation. The 914 AW would continue to conduct weapons training offsite for Security Forces and deploying personnel, resulting in the loss of several months of weapons qualifying time each year. The No Action Alternative is carried forward for analysis in the EA.



Figure 2-3. Existing Conditions at Site B

2.4.3 Alternatives Considered but Eliminated from Detailed Analysis

2.4.3.1 Construct Indoor Small Arms Range at an Offsite Location Closer to Niagara Falls ARS than the Currently Used Range

Under this alternative, the proposed facility would be built on public or private property closer to Niagara Falls ARS than the existing offsite outdoor range. This alternative, while an improvement upon the present situation, fails to eliminate the loss of time and additional expense of transporting personnel to and from an offsite facility. In addition, the USAF discourages the acquisition of additional property and the acquisition process could substantially delay project execution and escalate project cost. This alternative is not considered viable and is therefore eliminated from further detailed analysis in the EA.

2.4.3.2 Construct Outdoor Small Arms Range at Site A on Niagara Falls ARS

Under this alternative an outdoor small arms range would be constructed on the installation at Site A at the location shown in **Figure 2-1**. This alternative, while an improvement upon the present situation, fails to eliminate the loss of weapons training time caused by inclement weather conditions as dictated by AFI 36-2226 requirements. This alternative is not considered viable and is therefore eliminated from further detailed analysis in the EA.

2.4.3.3 Modify Existing Facility or Demolish Existing Facility and Use a Site on Niagara Fall ARS

Under this alternative, an existing facility would be converted into an indoor small arms range or would be demolished and the site reused for construction of the new range. This alternative would support the principles of sustainability. However, a survey of facilities scheduled for demolition on Niagara Falls

ARS indicates that none would be suitable for alteration nor would a suitable site be available for construction. This alternative is not considered viable and is therefore eliminated from further detailed analysis in the EA.

2.4.4 Preferred Alternative

Implementation of the Proposed Action, as identified in **Section 2.3**, is the Preferred Alternative.

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3. Affected Environment and Environmental Consequences

This section presents the characteristics of the affected environment and an analysis of the potential direct and indirect effects each alternative would have on the affected environment. Cumulative and other effects are discussed in **Section 4**. All potentially relevant resource areas were initially considered in this EA. Some were eliminated from detailed examination because of their inapplicability to this proposal. General descriptions of the eliminated resources and the basis for their elimination are described in **Section 3.1**.

The following discussion elaborates on the nature of the characteristics that might relate to resources.

Short-term or long-term. These characteristics are determined on a case-by-case basis and do not refer to any rigid time period. In general, short-term effects are those that would occur only with respect to a particular activity or for a finite period or only during the time required for construction or installation activities. Long-term effects are those that are more likely to be persistent and chronic.

Direct or indirect. A direct effect is caused by and occurs contemporaneously at or near the location of the action. An indirect effect is caused by a proposed action and might occur later in time or be farther removed in distance but still be a reasonably foreseeable outcome of the action. For example, a direct effect of erosion on a stream might include sediment-laden waters in the vicinity of the action, whereas an indirect impact of the same erosion might lead to lack of spawning and result in lowered reproduction rates of indigenous fish downstream.

Negligible, minor, moderate, or major. These relative terms are used to characterize the magnitude or intensity of an impact. Negligible effects are generally those that might be perceptible but are at the lower level of detection. A minor effect is slight, but detectable. A moderate effect is readily apparent. A major effect is one that is severely adverse or exceptionally beneficial.

Adverse or beneficial. An adverse effect is one having adverse, unfavorable, or undesirable outcomes on the man-made or natural environment. A beneficial effect is one having positive outcomes on the man-made or natural environment. A single act might result in adverse effects on one environmental resource and beneficial effects on another resource.

Significance. Significant effects are those that, in their context and due to their intensity (severity), meet the thresholds for significance set forth in CEQ regulations (40 CFR 1508.27).

Context. The context of an effect can be localized or more widespread (e.g., regional).

Intensity. The intensity of an effect is determined through consideration of several factors, including whether an alternative might have an adverse impact on the unique characteristics of an area (e.g., historical resources, ecologically critical areas), public health or safety, or endangered or threatened species or designated critical habitat. Effects are also considered in terms of their potential for violation of Federal, state, or local environmental law; their controversial nature; the degree of uncertainty or unknown effects, or unique or unknown risks; if there are precedent-setting effects; and their cumulative effects (see **Section 4**).

3.1 Preliminary Impact Assessment Exclusions

In compliance with NEPA, CEQ guidelines, and 32 CFR Part 989, the following evaluation of environmental impacts focuses on those resources and conditions potentially subject to effects and on potentially significant environmental issues deserving of study, and deemphasizes insignificant issues.

Some environmental resources and conditions that are often analyzed in an EA have been omitted from detailed analysis. The following provides the basis for such exclusions.

3.1.1 Geological Resources

The Proposed Action and Alternative Site B will require ground-disturbing activities associated with constructing the indoor small arms range on Niagara Falls ARS property. Therefore impacts on soil resources could be an issue, but not any other geological resources impacts. The discussion of soils is included with water resources (see **Section 3.6**). Accordingly, a detailed examination of geological resources in this EA is not necessary.

3.1.2 Cultural Resources

Cultural resources include archeological resources, historic architectural or engineering resources, and other traditional resources. Sections 106 and 110 of the National Historic Preservation Act protect cultural resources that are listed or eligible for listing in the National Register of Historic Places. As required by the DOD, Niagara Falls ARS has an Integrated Cultural Resources Management Plan (ICRMP) that outlines compliance with the applicable laws and other legal requirements (Niagara Falls ARS 2007).

An installation-wide Stage 1 archaeological survey was conducted in 1998. After reviewing the survey report, on 12 May 2000 the New York SHPO concluded that there are no archaeological sites at Niagara Falls ARS. The SHPO also stated that future projects at Niagara Falls ARS will not require any further archaeological investigations (NYSHPO 2000). Niagara Falls ARS's standard operating procedures for unanticipated discoveries provided in the ICRMP would be followed should any unanticipated cultural resources, including archeological sites, be encountered during construction activities (Niagara Falls ARS 2007).

The Proposed Action and Alternative Site B would not involve removal of any standing structures and would not be located near any National Register of Historic Places-listed or eligible properties, and are therefore not expected to impact any historic buildings, structures, landscapes, or viewsheds. Comments from the New York SHPO were requested during the IICEP process for this EA. The New York SHPO reviewed the EA in accordance with Section 106 of the National Historic Preservation Act. On 28 May 2009, the New York SHPO concluded that the proposed construction and operation of the indoor small arms range will have No Effect upon cultural resources in or eligible for inclusion in the National Register of Historic Places (see **Appendix C**). Accordingly, a detailed examination of cultural resources in this EA is not necessary.

3.1.3 Socioeconomics

The Proposed Action and Alternative Site B do not involve any activities that would contribute to changes in socioeconomic resources. There would be no change in the number of personnel assigned to Niagara Falls ARS; therefore, there would be no changes in area population or associated changes in demand for housing and services. It is expected that the termination of the use of the offsite range by military personnel from Niagara Falls ARS would have a negligible impact on the local economy. The proposed construction project is relatively small and would not affect local employment rates. Accordingly, a detailed examination of socioeconomics in this EA is not necessary.

3.1.4 Environmental Justice

The Proposed Action and Alternative Site B do not involve any activities that would affect residences around the installation or contribute to changes in low-income or minority populations. Accordingly, a detailed examination of environmental justice in this EA is not necessary.

3.1.5 Infrastructure

The Proposed Action and Alternative Site B would not be located in any utility corridors, nor significantly increase utility systems loading. Therefore, the Proposed Action and Alternative Site B are not expected to negatively impact utilities or similar infrastructure. A short paragraph discussing utility distribution is included under land use (see **Section 3.3**). Accordingly, a detailed examination of infrastructure in this EA is not necessary.

3.1.6 Traffic and Transportation

It is expected that the small number of personnel that would access the small arms range would have no impact on the surrounding transportation network. A short paragraph discussing government-owned and privately-owned vehicle parking at the range is included under land use (see **Section 3.3**). Accordingly, a detailed examination of transportation in this EA is not necessary.

3.2 Noise

3.2.1 Definition of the Resource

Sound is defined as a particular auditory effect produced by a given source, for example the sound of rain on the roof. Sound is measured with instruments that record instantaneous sound levels in decibels. A-weighted sound level measurements in decibels (dBA) are used to characterize sound levels that can be sensed by the human ear. “A-weighted” denotes the adjustment of the frequency content of a sound-producing event to represent the way in which the average human ear responds to the audible event. All sound levels analyzed in this EA are A-weighted.

Noise and sound share the same physical aspects, but noise is considered a disturbance while sound is defined as an auditory effect. Noise is defined as any sound that is undesirable because it interferes with communication, is intense enough to damage hearing, or is otherwise annoying. Noise can be intermittent or continuous, steady or impulsive, and can involve any number of sources and frequencies. It can be readily identifiable or generally nondescript. Human response to increased sound levels varies according to the source type, characteristics of the sound source, distance between source and receptor, receptor sensitivity, and time of day. How an individual responds to the sound source will determine if the sound is viewed as music to one’s ears or as annoying noise. Affected receptors are specific (i.e., schools, churches, or hospitals) or broad areas (e.g., nature preserves or designated districts) in which occasional or persistent sensitivity to noise above ambient levels exists.

Federal Regulations. The Federal government has established noise guidelines and regulations for the purpose of protecting citizens from potential hearing damage and from various other adverse physiological, psychological, and social effects associated with noise. According to the USAF, the Federal Aviation Administration, and the U.S. Department of Housing and Urban Development criteria, residential units and other noise-sensitive land uses are “clearly unacceptable” in areas where the Day-Night Average A-weighted Sound Level (DNL) noise exposure exceeds 75 dBA, “normally unacceptable” in regions exposed to noise between 65 and 75 dBA, and “normally acceptable” in areas exposed to noise of 65 dBA or less. The Federal Interagency Committee on Noise developed land use

compatibility guidelines for noise in terms of DNL (FICON 1992). For outdoor activities, the USEPA recommends a DNL of 55 dBA as the sound level below which there is no reason to suspect that the general population would be at risk from any of the effects of noise (USEPA 1974). DNL is the metric recognized by the U.S. government for measuring noise and its effects on humans.

In 1978, EO 12088, *Federal Compliance with Pollution Control Standards*, made the head of each Executive agency responsible for ensuring that all necessary actions are taken for the prevention, control, and abatement of environmental pollution with respect to Federal facilities and activities under the control of the agency. The head of each Executive agency is responsible for compliance with applicable pollution control standards, which includes the Noise Control Act of 1972. "Applicable pollution control standards" means the same substantive, procedural, and other requirements that would apply to a private person under the Act. The Executive agency is responsible for submitting an annual plan for the control of environmental pollution, which shall provide for any necessary improvement in the design, construction, management, operation, and maintenance of Federal facilities and activities. The head of each Executive agency also ensures that sufficient funds for compliance with applicable pollution control standards are requested in the agency budget (EO 12088).

Under the Noise Control Act of 1972, the Occupational Safety and Health Administration (OSHA) established workplace standards for noise. The minimum requirement states that constant noise exposure must not exceed 90 dBA over an 8-hour period. The highest allowable sound level to which workers can be constantly exposed to is 115 dBA, and exposure to this level must not exceed 15 minutes within an 8-hour period. The standards limit instantaneous exposure, such as impact noise, to 140 dBA. If noise levels exceed these standards, employers are required to provide hearing protection equipment that will reduce sound levels to acceptable limits.

Ambient Sound Levels. Noise levels in residential areas vary depending on the housing density and proximity to parks and open space, major traffic areas, or airports. As shown on **Table 3-1**, a normal suburban area has a DNL of about 55 dBA, which increases to 60 dBA for an urban residential area, and to 80 dBA in the downtown section of a city (FHWA 1980).

Table 3-1. Typical Outdoor Noise Levels

DNL (dBA)	Location
50	Residential area in a small town or quiet suburban area
55	Suburban residential area
60	Urban residential area
65	Noisy urban residential area
70	Very noisy urban residential area
80	City noise (downtown of major metropolitan area)
88	3rd floor apartment in a major city next to a freeway

Source: FHWA 1980

Most people are exposed to sound levels of 50 to 55 dBA or higher on a daily basis. Studies specifically conducted to determine noise effects on various human activities show that about 90 percent of the population is not significantly bothered by outdoor sound levels below a DNL of 65 dBA (FICON 1992). Studies of community annoyance in response to numerous types of environmental noise show that DNL correlates well with effect assessments and that there is a consistent relationship between DNL and the level of annoyance.

Construction Sound Levels. Clearing and grading activities as well as building construction can cause an increase in sound that is well above the ambient level. A variety of sounds come from graders, pavers, trucks, welders, and other work processes. **Table 3-2** lists sound levels associated with common types of construction equipment that could be used under the Proposed Action. Construction equipment usually exceeds the ambient sound levels by 20 to 25 dBA in an urban environment and up to 30 to 35 dBA in a quiet suburban area.

3.2.2 Description of the Affected Environment

The ambient sound environment around the proposed small arms range locations (Site A and Site B) is affected mainly by aircraft operations and automobile traffic. The noise from aircraft operations dominates over noise produced by vehicle traffic. The runways at Niagara Falls IAP are used by military aircraft from the Niagara Falls ARS and commercial aircraft. Military and commercial aircraft operations are the primary sound sources contributing to the ambient noise environment in the vicinity of the proposed indoor small arms range. Vehicles traveling south of the installation on Route 62 (Niagara Falls Boulevard) and Route 182 (Porter Road), east of the installation on Walmore Road, north of the installation on Lockport Road, and the roadways within the installation boundary also contribute to the ambient noise environment.

Table 3-2. Predicted Noise Levels for Construction Equipment

Construction Category and Equipment	Predicted Noise Level at 50 feet (dBA)
Clearing and Grading	
Bulldozer	80
Grader	80–93
Truck	83–94
Roller	73–75
Excavation	
Backhoe	72–93
Jackhammer	81–98
Building Construction	
Concrete mixer	74–88
Welding generator	71–82
Pile driver	91–105
Crane	75–87
Paver	86–88

Source: USEPA 1971

3.2.3 Environmental Consequences

Evaluation Criteria

An analysis of the potential impacts associated with noise typically evaluates potential changes to the existing acoustical environment that would result from implementation of a proposed action. Potential changes in the acoustical environment can be beneficial (i.e., they reduce the number of sensitive

receptors exposed to unacceptable noise levels or reduce the ambient sound level), negligible (i.e., the total number of sensitive receptors to unacceptable noise levels is essentially unchanged), or adverse (i.e., they result in increased sound exposure to unacceptable noise levels or ultimately increase the ambient sound level). Projected noise effects were evaluated qualitatively for the alternatives considered.

Proposed Action – Site A

Under the Proposed Action, an increase in noise levels could originate from several sources and this analysis addresses construction equipment, vehicle traffic, and range operations.

Construction Noise. Short-term minor adverse effects are anticipated as a result of construction activities under the Proposed Action. Noise from construction activities varies depending on the type of construction being done, the area that the project would occur in, and the distance from the source. Construction activities under the Proposed Action include grading, paving, and building construction. To predict how these activities would affect populations, noise from the anticipated construction was estimated. For example, as shown in **Table 3-1**, building construction usually involves several pieces of equipment (e.g., saws and haul trucks) that can be used simultaneously. Cumulative noise from the construction equipment at Site A during the busiest day was estimated to determine the total effect of noise from building activities at a given distance. The Niagara Falls IAP terminal is approximately 6,700 feet southwest of Site A and would not be affected by construction noise. Examples of expected construction noise during daytime hours, Monday through Friday, for the Proposed Action are as follows. Noise levels were estimated using logarithmic cumulative decibel equations for grading, paving, and building construction using the equipment shown in **Table 3-2** for each of the distances provided below.

- Niagara Falls ARS personnel accessing Building 426, which is approximately 75 feet southwest of Site A, would likely experience noise levels of approximately 85 dBA from construction activities
- Persons accessing the closest residence to Site A, which is off northbound Wendt Road approximately 730 feet northwest of Site A, would likely experience noise levels of approximately 65 dBA from construction activities
- Persons accessing the Niagara Ministries Church, which is approximately 2,000 feet northwest of Site A, would likely experience noise levels of approximately 57 dBA from construction activities.

Implementation of the Proposed Action would have short-term minor adverse effects on the acoustical environment from the use of heavy equipment during construction activities. Noise generation would last only for the duration of construction activities and would be isolated to normal working hours (i.e., between 7:00 a.m. and 5:00 p.m.).

Vehicular Noise. Short-term minor adverse effects on the ambient environment are anticipated as a result of the increase in construction vehicle traffic under the Proposed Action. Construction traffic would use the main gate off Lockport Road or turn onto Utzig Drive from Walmore Road to enter the installation and would then proceed to Site A. The additional traffic resulting from construction vehicles would likely cause minor increases in noise levels on noise-sensitive populations adjacent to these roadways.

Operational Impacts. The design of the proposed facility would meet the requirements addressed in ETL 08-11, *Small Arms Range Design and Construction* (USAF 2008) and would be constructed to satisfy certification requirements for the M-16 series rifle, M-9 pistol, M-11 pistol, M-870 shotgun, M-240B machine gun, and M-249 automatic rifle (AFRC 2008). The noise reduction measures provided in ETL 08-11 (e.g., steel plate wall designs, unpainted heavy masonry walls, and absorptive acoustical

surfacing) would result in minimal noise impacts outside the proposed facility during operations. Therefore, the noise level outside the facility during operations would not increase above the existing ambient noise level, which is dominated by aircraft noise.

Noise besides small arms firing would occur within the facility, such as noise from the ventilation system. Per ETL 08-11, noise levels inside the facility at the firing line when no one is firing should be considerably less than 85 dBA to improve communication between shooters and the range control official. Short duration noise from small arms firing would exceed 85 dBA and could be as high as 160 dBA. The range design should prevent the reflection of higher noise levels by using sound-absorbing materials where possible. Personnel inside of the small arms range would wear hearing protection when the range is active, which would provide protection against impacts from high levels of short-term noise (USAF 2008).

Since only Niagara Falls ARS personnel would use the proposed facility on a regular basis, the Proposed Action would not result in additional noise impacts from military traffic on the roadways surrounding the installation. The facility would be utilized by other agencies (e.g., other branches of the U.S. military or civilian law enforcement agencies) on an “as-available” basis. This use of the facility would be infrequent; therefore, long-term intermittent negligible to minor adverse noise impacts from non-Niagara Falls ARS traffic on the roadways surrounding the installation would be expected.

Alternative Site B

Under Alternative Site B, an increase in noise levels similar to those discussed under the Proposed Action could originate from construction equipment and vehicle traffic.

Construction Noise. Short-term minor adverse effects are anticipated as a result of construction activities under Alternative Site B. The same construction activities discussed under the Proposed Action would also apply to Alternative Site B. Cumulative noise from the construction equipment at Alternative Site B during the busiest day was estimated to determine the total effect of noise from building activities at a given distance. The Niagara Falls IAP terminal is approximately 5,600 feet southwest of Site B and would not be affected by construction noise. Examples of expected construction noise during daytime hours, Monday through Friday, for Alternative Site B are as follows. Noise levels were estimated using logarithmic cumulative decibel equations for grading, paving, and building construction using the equipment shown in **Table 3-2** for each of the distances provided below.

- Niagara Falls ARS personnel accessing Building 830, which is approximately 75 feet west of Site B, would likely experience noise levels of approximately 85 dBA from construction activities.
- Persons accessing the closest residence to Site B, which is off eastbound Lockport Road approximately 1,500 feet northeast of Site B, would likely experience noise levels of approximately 59 dBA from construction activities.
- Persons accessing the Niagara Children’s Education and Treatment Center, which is approximately 1,900 feet northwest of Site B, would likely experience noise levels of approximately 57 dBA from construction activities.

Implementation of Alternative Site B would have similar short-term minor adverse effects on the acoustical environment as those discussed above for the Proposed Action from the use of heavy equipment during construction activities. Noise generation would last only for the duration of construction activities and would be isolated to normal working hours (i.e., between 7:00 a.m. and 5:00 p.m.).

Vehicular Noise. Short-term minor adverse effects on the ambient environment are anticipated as a result of the increase in construction-related vehicular traffic under Alternative Site B. Construction traffic would use the main gate off Lockport Road or turn onto Kirsch Avenue from Tuscarora Road to enter the installation and would then proceed to Alternative Site B. The additional traffic resulting from construction vehicles would likely cause minor increases in noise levels on noise-sensitive populations adjacent to these roadways.

Operational Impacts. Operational impacts associated with Alternative Site B would be the same as the operational impacts discussed under the Proposed Action.

No Action Alternative

Under the No Action Alternative, the indoor small arms range would not be constructed. The acoustical environment described in **Section 3.1.2** would remain unchanged. No adverse effects on the ambient noise environment would occur under the No Action Alternative.

3.3 Land Use

3.3.1 Definition of the Resource

The term “land use” refers to real property classifications that indicate either natural conditions or the types of human activity occurring on a parcel. In many cases, land use descriptions are codified in local zoning laws. There is, however, no nationally recognized convention or uniform terminology for describing land use categories. As a result, the meanings of various land use descriptions, “labels,” and definitions vary among jurisdictions.

Natural conditions of property can be described or categorized as unimproved, undeveloped, conservation or preservation area, and natural or scenic area. There are a wide variety of land use categories resulting from human activity. Descriptive terms often used include residential, commercial, industrial, agricultural, institutional, and recreational.

Two main objectives of land use planning are to ensure orderly growth and compatible uses among adjacent property parcels or areas. Compatibility among land uses fosters the societal interest of obtaining the highest and best uses of real property. Tools supporting land use planning include written master plans/management plans and zoning regulations. According to AFI 32-7062, *Air Force Comprehensive Planning*, the site planning process must address potential noise impacts and consider the location of buildings. In appropriate cases, the locations and extent of proposed actions need to be evaluated for their potential effects on project site and adjacent land uses. The foremost factor affecting a proposed action in terms of land use is its compliance with any applicable land use or zoning regulations. Other relevant factors include matters such as existing land use at the project site, the types of land uses on adjacent properties and their proximity to a proposed action, the duration of a proposed activity, and its “permanence.”

3.3.2 Description of the Affected Environment

The on- and off-installation land use information provided below was obtained from the Niagara Falls ARS General Plan (Niagara Falls ARS 1998a).

The Niagara ARS General Plan identifies nine land use categories: administrative, aircraft operations and maintenance, airfield, community, lodging, industrial, medical, open space, and outdoor recreation. There are three main land use types within the installation boundary: administrative, industrial, and aircraft and

maintenance. The central portion of the installation is primarily made up of administrative land use areas. Two large parcels of industrial land use areas are located in the western and eastern portions of the installation. These areas are surrounded by intermixed open space, community, and recreational land use types.

The Niagara Falls ARS land use plan emphasizes the consolidation of similar activities and the promotion of positive functional relationships between land uses. As older facilities are demolished, new buildings should be sited according to the plan. This effort is intended to result in the consolidation of aircraft operations and maintenance functions adjacent to the airfield. See **Figure 3-1** for existing land use at Niagara Falls ARS.

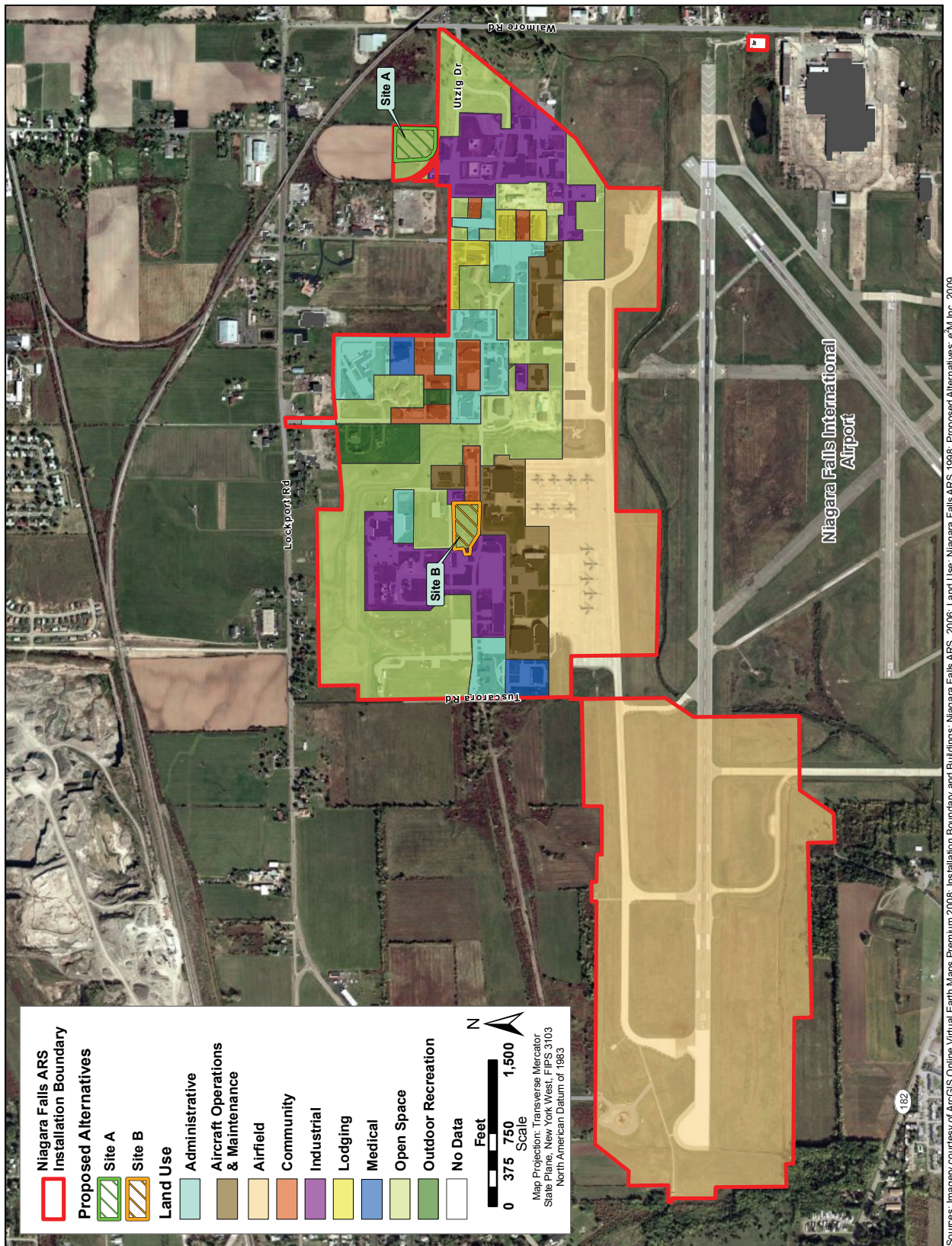
Most of the changes to the installation's development pattern involve the consolidation of land use pockets to form larger land use areas yielding greater future development potential. Emphasis is also placed on preserving the 100-year floodplain and wetland areas by designating these sites as either open space or outdoor recreation areas. The key to successfully developing Niagara Falls ARS would be the identification and consolidation of compatible activities and the continued use of land use areas as opposed to individually sited facilities.

Niagara Falls ARS is a compact installation bounded by Tuscarora Road to the west, Lockport Road to the north, Walmore Road to the east, and Niagara Falls IAP to the south. The dominant feature on the southern side of the installation is the airfield, consisting of permanent and temporary aircraft parking aprons, apron access taxiways, and the Niagara Falls IAP property. Immediately adjacent to the airfield is a consolidated area devoted to aircraft operations and maintenance. Within this area are key operational facilities, including the fuels systems maintenance hangar, aircraft maintenance hangar, and aircraft maintenance shop, which are served by the hangar access apron. An isolated operational area surrounds the engine test stand.

Immediately to the south of the installation is the main taxiway used by NYANG and AFRC aircraft accessing Niagara Falls IAP. Further south are Niagara Falls IAP's general aviation and passenger terminals and hangars, and the remainder of the airport's runways and taxiways. The presence of these facilities effectively precludes the installation from constructing any facilities south of this point. To the north, west, and east are areas of rural to low-density residential and industrial land uses.

Additionally, the Niagara County Legislature is developing the Niagara Communities Comprehensive Plan as a result of an award from the New York State Qualities Communities Grant program (Niagara County 2007a). This initiative will assist the communities of Niagara County in developing the first comprehensive plan dedicated exclusively to Niagara County. The Plan is scheduled for completion in 2009 and will address land use and environment, economic development, county services and facilities, educational institutions, and public health and safety. An initial review indicated the area east of Niagara Falls ARS as a potential residential growth area (Niagara County 2007b).

The *Niagara Frontier Urban Area Freight Transportation Study* completed in 2007 by the Niagara Frontier Transportation Authority examined the possibility of expanding Niagara Falls IAP cargo-carrying capacity and charter flight service (Niagara County 2007c). The study concluded that air cargo is going to increase in the future and there was room for expansion within the existing complex.



Sources: Imagery courtesy of ArcGIS Online Virtual Earth Maps Premium 2008; Installation Boundary and Buildings: Niagara Falls ARS, 2008; Land Use: Niagara Falls ARS, 1998; Proposed Alternatives: eM Inc. 2009.

Figure 3-1. Existing Land Use at Niagara Falls ARS

3.3.3 Environmental Consequences

Evaluation Criteria

An analysis of the effects of a proposed action on land use on an Air Force installation addresses the potential for impacts on areas affected to occur, as well as the potential for buildings and other obstructions to intrude into safeguarded airspace. New construction should be compatible with current land use guidelines. Land use can remain compatible, become compatible, or become incompatible. Projected compatibility issues were measured both qualitatively and quantitatively. The level of potential land use effects is based on the degree of land use sensitivity in areas affected by a proposed action and compatibility of proposed actions with existing conditions. In general, a land use effect would be significant if it met any of the following criteria:

- Was inconsistent or in noncompliance with existing land use plans or policies
- Precluded the viability of existing land use
- Precluded continued use or occupation of an area
- Was incompatible with adjacent land use to the extent that public health or safety is threatened
- Conflicted with planning criteria established to ensure the safety and protection of human life and property.

Proposed Action – Site A

A conversion of existing land use would occur on Niagara Falls ARS as a result of the Proposed Action. Using criteria established in the Niagara Falls ARS General Plan, the proposed indoor small arms range would be classified as an administrative facility. The Proposed Action would convert approximately 4.6 acres of land designated as Site A (see **Figure 3-1**) from open space to administrative land use. On-installation land use adjoining Site A is currently open space (wetlands) and industrial.

No adverse effects on land use would be anticipated by implementing the Proposed Action. AFI 32-7062 classifies administrative land use as compatible with open space and industrial land uses. No change is anticipated in the future use of adjacent areas. Therefore, the Proposed Action would not preclude the viability of existing adjacent land uses or future plans.

There would be a negligible impact on land use from noise during construction or from facility usage. Adjoining land uses are open space and industrial, which are not sensitive to noise. Additionally, USAF design criteria for indoor small arms ranges (ETL 08-11) provides sufficient noise attenuation to prevent any adverse impact on surrounding areas.

There would be negligible impacts on infrastructure resources. The proposed facility is not anticipated to disrupt utility services or substantially increase demand such that the capacity of any particular system would be exceeded. The proposed facility is not anticipated to affect the installation transportation network as Site A is an isolated area in the northeastern quadrant of the installation with no off-installation access and it is expected that the existing road system would be able to accommodate the slight increase in traffic volume generated by installation personnel and range users. Additionally, Site A is large enough to accommodate government and privately owned vehicle parking requirements.

However, though Niagara Falls ARS is a relatively small installation, Site A does not provide central access for all anticipated facility users. The primary users of the indoor small arms range are anticipated to be military personnel assigned to the 914 AW of AFRC and the 107 AW of NYANG. As directed by

the Defense Base Closure and Realignment Commission, the 107 AW became an associate wing with the 914 AW in 2008, sharing personnel, resources, and equipment to accomplish the installation mission (Niagara Falls ARS 2008a). As such, the proposed range would be utilized primarily by personnel assigned to both the 914 AW and 107 AW. Site A is situated on the opposite side of the installation from the 107 AW and might not be the preferred location from a functional standpoint. Also, higher infrastructure construction costs might be incurred by the selection of Site A, which is an undeveloped site with no existing infrastructure, compared to the selection of a site within the installation cantonment area where infrastructure already exists.

Alternative Site B

A conversion of existing land use would occur on Niagara Falls ARS as a result of this alternative. Using criteria established in the Niagara Falls ARS General Plan, the proposed indoor small arms range would be classified as an administrative facility. The proposed facility would convert approximately 2 acres of land designated as Alternative Site B (see **Figure 3-1**) from open space to administrative land use. On-installation land use adjoining the proposed indoor small arms range is currently open space to the north, industrial and administrative use to the east, airfield operations and maintenance to the south, and industrial to the west.

No adverse effects on land use would be anticipated by implementing this alternative. AFI 32-7062 classifies administrative land use as compatible with open space, industrial, and aircraft operations and maintenance land uses. No change is anticipated in the future use of adjacent areas. Therefore, this alternative would not preclude the viability of existing adjacent land uses or future plans.

Minor, short-term adverse impacts would be anticipated from noise generated by equipment during facility construction. However, there would be a negligible impact from noise as a result of facility usage, as USAF design criteria for indoor small arms ranges (ETL 08-11) provides sufficient noise attenuation to prevent any adverse impact on surrounding areas.

There would be a negligible effect on infrastructure resources. The proposed facility is not anticipated to disrupt utility services or substantially increase demand such that the capacity of any particular system would be exceeded. The proposed facility is not anticipated to affect the installation transportation network as the existing road system in the vicinity of Alternative Site B can accommodate the anticipated slight increase in traffic volume generated by range personnel and users. Additionally, the site is large enough to accommodate government- and privately owned vehicle parking requirements.

Alternative Site B provides excellent access for the majority of anticipated facility users. As discussed above for the Proposed Action, the primary users of the indoor small arms range are anticipated to be military personnel assigned to the 914 AW of AFRC and the 107 AW of NYANG. As directed by the Defense Base Closure and Realignment Commission, the 107 AW became an associate wing with the 914 AW in 2008, sharing personnel, resources, and equipment to accomplish the installation mission (Niagara Falls ARS 2008a). As such, the range will be primarily utilized by personnel assigned to both the 914 AW and 107 AW. Alternative Site B is situated between the 914 AW and 107 AW cantonment areas and might be the preferred location from a functional standpoint. Lower infrastructure construction costs might be incurred by the selection of Alternative Site B as infrastructure is readily available to the site.

No Action Alternative

The No Action Alternative would result in a continuation of existing conditions. The affected environment would remain essentially unchanged from what was described in **Section 3.3.2**. No effects on land use would be expected.

3.4 Air Quality

3.4.1 Definition of the Resource

In accordance with Federal Clean Air Act (CAA) requirements, the air quality in a given region or area is measured by the concentration of criteria pollutants in the atmosphere. The air quality in a region is a result of not only the types and quantities of atmospheric pollutants and pollutant sources in an area, but also surface topography, the size of the topological “air basin,” and the prevailing meteorological conditions.

Under the CAA, USEPA developed numerical concentration-based standards, or National Ambient Air Quality Standards (NAAQS), for pollutants that have been determined to affect human health and the environment. The NAAQS represent the maximum allowable concentrations for ozone (O₃), measured as either volatile organic compounds (VOCs) or total nitrogen oxides (NO_x); carbon monoxide (CO); nitrogen dioxide (NO₂); sulfur oxides (SO_x); respirable particulate matter (including particulate matter equal to or less than 10 microns in diameter [PM₁₀] and particulate matter equal to or less than 2.5 microns in diameter [PM_{2.5}]); and lead (Pb) (40 CFR Part 50). The CAA also gives the authority to states to establish air quality rules and regulations. New York has adopted the NAAQS (New York Code of Rules and Regulations [NYCRR] Title 6, Subpart 257). **Table 3-3** presents the USEPA NAAQS and New York Ambient Air Quality Standards.

USEPA classifies the air quality in an air quality control region (AQCR), or in subareas of an AQCR, according to whether the concentrations of criteria pollutants in ambient air exceed the NAAQS. Areas within each AQCR are therefore designated as either “attainment,” “nonattainment,” “maintenance,” or “unclassified” for each of the six criteria pollutants. Attainment means that the air quality within an AQCR is better than the NAAQS; nonattainment indicates that criteria pollutant levels exceed NAAQS; maintenance indicates that an area was previously designated nonattainment but is now attainment; and an unclassified air quality designation by USEPA means that there is not enough information to appropriately classify an AQCR, so the area is considered attainment. USEPA has delegated the authority for ensuring compliance with the NAAQS to the New York State Department of Environmental Conservation (NYSDEC). In accordance with the CAA, each state must develop a State Implementation Plan (SIP), which is a compilation of regulations, strategies, schedules, and enforcement actions designed to move the state into compliance with all NAAQS.

The General Conformity Rule requires that any Federal action meet the requirements of a SIP or Federal Implementation Plan. More specifically, CAA conformity is ensured when a Federal action does not cause a new violation of the NAAQS; contribute to an increase in the frequency or severity of violations of NAAQS; or delay the timely attainment of any NAAQS, interim progress milestones, or other milestones toward achieving compliance with the NAAQS. The General Conformity Rule applies only to regionally significant actions in nonattainment or maintenance areas.

Federal Prevention of Significant Deterioration (PSD) regulations also define air pollutant emissions from proposed major stationary sources or modifications to be “significant” if (1) a proposed project is within 10 kilometers of any Class I area, and (2) regulated pollutant emissions would cause an increase in the 24-hour average concentration of any regulated pollutant in the Class I area of 1 micrograms per cubic meter (µg/m³) or more (40 CFR 52.21[b][23][iii]). A Class I area includes national parks larger than 6,000 acres, national wilderness areas and national memorial parks larger than 5,000 acres, and international parks. PSD regulations also define ambient air increments, limiting the allowable increases to any area’s baseline air contaminant concentrations, based on the area’s Class designation (40 CFR 52.21[c]). According to 40 CFR Part 81, there are no Class I areas in the State of New York or in the

Table 3-3. National and State Ambient Air Quality Standards

Pollutant	Standard Value		Standard Type
	Federal	State	
CO			
8-hour Average ^a	9 ppm (10 mg/m ³)	Same	Primary
1-hour Average ^a	35 ppm (40 mg/m ³)	Same	Primary
NO ₂			
Annual Arithmetic Mean	0.053 ppm (100 µg/m ³)	Same	Primary and Secondary
O ₃			
8-hour Average ^b	0.075 ppm	--	Primary and Secondary
1-hour Average ^c	--	0.12 ppm (235 µg/m ³)	Primary and Secondary
Pb			
Quarterly Average	1.5 µg/m ³	Same	Primary and Secondary
PM ₁₀			
Annual Arithmetic Mean	--	50 µg/m ³	
24-hour Average	150 µg/m ³ ^d	Same ^a	Primary and Secondary
PM _{2.5}			
Annual Arithmetic Mean ^e	15 µg/m ³	--	Primary and Secondary
24-hour Average ^f	35 µg/m ³	--	Primary and Secondary
SO ₂			
Annual Arithmetic Mean	0.03 ppm	0.02 ppm	Primary
24-hour Average ^a	0.14 ppm	0.1 ppm	Primary
3-hour Average ^a	0.5 ppm (1,300 µg/m ³)	Same	Secondary

Source: USEPA 2008

Notes:

Parenthetical values are approximate equivalent concentrations.

ppm = parts per million

mg/m³ = milligrams per cubic meterµg/m³ = micrograms per cubic meter^a Not to be exceeded more than once per year.^b To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.075 ppm. This standard is effective on May 27, 2008, and replaces the 1997 8-hour ozone standard of 0.08 ppm. However, the 1997 standard and its implementing rules remain in effect while USEPA undergoes rulemaking to transition to the 2008 standard.^c As of June 15, 2005, USEPA revoked the Federal 1-hour ozone standard in all areas except the 14 8-hour ozone nonattainment Early Action Compact Areas.^d Not to be exceeded more than once per year on average over 3 years.^e To attain this standard, the 3-year average of the weighted annual mean PM_{2.5} concentrations from single or multiple community-oriented monitors must not exceed 15.0 µg/m³.^f To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 35 µg/m³. This standard is effective December 17, 2006.

vicinity of Niagara Falls ARS. Therefore, Federal PSD regulations would not apply to the Proposed Action (USEPA 2009a).

Many chemical compounds found in the Earth's atmosphere act as "greenhouse gases." These gases allow sunlight to enter the atmosphere freely. When sunlight strikes the Earth's surface, some of it is reflected back towards space as infrared radiation (heat). Greenhouse gases absorb this infrared radiation and trap the heat in the atmosphere. Over time, the trapped heat results in the phenomenon of global warming.

In April 2007, the U.S. Supreme Court declared that carbon dioxide (CO₂) and other greenhouse gases are air pollutants under the CAA. The Court declared that the USEPA has the authority to regulate emissions from new cars and trucks under the CAA. Many gases exhibit these "greenhouse" properties. The sources of the majority of greenhouse gases come mostly from natural sources but are also contributed to by human activity.

Title V of the CAA Amendments of 1990 requires states and local agencies to permit major stationary sources. A major stationary source has the potential to emit more than 100 tons per year (tpy) of any one criteria air pollutant, 10 tpy of a hazardous air pollutant (HAP), or 25 tpy of any combination of HAPs. The purpose of the permitting rule is to establish regulatory control over large, industrial-type activities and monitor their effect on air quality. Section 112 of the CAA defines the sources and kinds of HAPs.

3.4.2 Description of the Affected Environment

The proposed site is in Niagara County, New York, which is part of the Niagara Frontier Intrastate 162 AQCR (NFIAQCR) (40 CFR 81.24). The NFIAQCR is classified as in Subpart 1 basic nonattainment for 8-hour ozone and in attainment for all other criteria pollutants (USEPA 2009b). The most recent emissions inventories for Niagara County and the NFIAQCR are shown in **Table 3-4**. Niagara County is considered the local area of influence, and the NFIAQCR is considered the regional area of influence for the air quality analysis.

Table 3-4. Local and Regional Air Emissions Inventory for 2007

	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO₂ (tpy)	PM₁₀ (tpy)	PM_{2.5} (tpy)
Niagara County, New York	16,681	14,290	58,117	7,676	9,099	2,140
NFIAQCR	55,425	60,307	321,103	58,441	32,324	7,765

Source: USEPA 2007

Niagara ARS is registered as a minor source of air emissions with the NYSDEC based on definitions and requirements listed under NYCRR Part 201-3.3, *Trivial Air Activities*. There are various stationary combustion sources on the installation that have the potential to emit criteria pollutants and HAPs, including the installation's boilers and generators. VOCs are emitted primarily from handling of organic liquids (i.e., refueling activities). Miscellaneous particulate matter sources at Niagara ARS include dust collectors, abrasive blasting units, and woodworking equipment. Other stationary sources at Niagara ARS include paint booths, degreasers, solvent cleaners, aircraft fuel cell maintenance, aircraft engine test cell, and wash racks. There is no permitted stationary equipment on Niagara Falls ARS. Mobile sources include aircraft operations, government-owned vehicles, privately owned vehicles, aerospace ground equipment, and other sources not included in the state's stationary source permitting program (Niagara Falls ARS 2008b).

Niagara Falls ARS is required to prepare and retain emissions inventories for NYSDEC. The purpose of these emissions inventories is to estimate and document air pollutant emissions from stationary and mobile sources. Emission inventories are retained at Base Civil Engineering in Building 403. **Table 3-5** summarizes the annual air emissions and potential to emit values.

Table 3-5. Reported Air Emissions and Potential to Emit Values for Niagara Falls ARS

	NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM ₁₀ (tpy)	PM _{2.5} (tpy)	HAP (tpy)
2007 Actual Emissions	4.63	1.46	3.48	0.03	0.39	0.39	1.79
Potential to Emit Values	49.56	8.48	32.45	0.38	3.90	3.88	8.04
Major Source Threshold	100	50	100	100	100	100	25

Sources: Niagara Falls ARS 2008b

3.4.3 Environmental Consequences

Evaluation Criteria

The Federal *de minimis* threshold emissions rates were established by USEPA in the General Conformity Rule to focus analysis requirements on those Federal actions with the potential to substantially affect air quality. **Table 3-6** presents these thresholds, by regulated pollutant. As shown in **Table 3-6**, *de minimis* thresholds vary depending on the severity of the nonattainment area classification.

The environmental consequences to local and regional air quality conditions near a proposed Federal action are determined based upon the increases in regulated pollutant emissions relative to existing conditions and ambient air quality. Specifically, the impact in NAAQS “attainment” areas would be considered significant if the net increases in pollutant emissions from the Federal action would result in any one of the following scenarios:

- Cause or contribute to a violation of any national or state ambient air quality standard
- Expose sensitive receptors to substantially increased pollutant concentrations
- Represent an increase of 10 percent or more in an affected AQCR emissions inventory
- Exceed any Evaluation Criteria established by a SIP.

Effects on air quality in NAAQS “nonattainment” areas are considered significant if the net changes in project-related pollutant emissions result in any of the following scenarios:

- Cause or contribute to a violation of any national or state ambient air quality standard
- Increase the frequency or severity of a violation of any ambient air quality standard
- Delay the attainment of any standard or other milestone contained in the SIP.

With respect to the General Conformity Rule, effects on air quality would be considered significant if the proposed Federal action would result in an increase of a nonattainment or maintenance area’s emissions inventory by 10 percent or more for one or more nonattainment pollutants, or if such emissions exceed *de minimis* threshold levels established in 40 CFR 93.153(b) for individual nonattainment pollutants or for pollutants for which the area has been redesignated as a maintenance area.

In addition to the *de minimis* emissions thresholds, Federal PSD regulations define air pollutant emissions to be significant if the source is within 10 kilometers of any Class I area, and emissions would cause an

increase in the concentration of any regulated pollutant in the Class I area of 1 µg/m³ or more (40 CFR 52.21(b)(23)(iii)).

Table 3-6. Conformity *de minimis* Emissions Thresholds

Pollutant	Status	Classification	<i>de minimis</i> Limit (tpy)
O ₃ (measured as NO _x or VOCs)	Nonattainment	Extreme	10
		Severe	25
		Serious	50
		Moderate/marginal (inside ozone transport region)	50 (VOCs)/100 (NO _x)
		All others	100
	Maintenance	Inside ozone transport region	50 (VOCs)/100 (NO _x)
		Outside ozone transport region	100
CO	Nonattainment/maintenance	All	100
PM ₁₀	Nonattainment/maintenance	Serious	70
		Moderate	100
		All Maintenance Areas	100
PM _{2.5} (measured directly, as SO ₂ , or as NO _x)	Nonattainment/maintenance	All	100
SO ₂	Nonattainment/maintenance	All	100
NO _x	Nonattainment/maintenance	All	100
Pb	Nonattainment/maintenance	All	25

Source: 40 CFR 93.153

Proposed Action – Site A

The Proposed Action would have short-term minor adverse effects on air quality. **Table 3-7** summarizes the estimated air quality emissions from construction activities. The estimated emissions from the Proposed Action would represent a minor percentage of the air emissions inventory locally in Niagara County and would represent a negligible percentage of the air emissions inventory regionally within the NFIAQCR.

Construction Activities. Emissions from construction activities associated with the Proposed Action would have short-term, minor, adverse effects on local air quality and would have negligible effects on regional air quality. Implementation of the Proposed Action would not result in violations of any ambient air quality standards. The construction of the indoor small arms range as described in **Section 2.3** would generate air pollutant emissions as a result of grading, filling, compacting, trenching, and operation of

Table 3-7. Estimated Air Emissions Resulting from Construction Activities

Activity	NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM ₁₀ (tpy)	PM _{2.5} (tpy)
<i>Construction Combustion</i>	5.267	0.557	2.319	0.408	0.378	0.366
<i>Construction Fugitive Dust</i>	--	--	--	--	3.051	0.168
Total Proposed Action Emissions in 2010	5.267	0.557	2.319	0.408	3.429	0.535
USPEA nonattainment <i>de minimis</i> Threshold	100	50	NA	NA	NA	NA
Percent of NFIAQCR Inventory	0.0095	0.0009	0.0007	0.0007	0.0106	0.0069

construction equipment. Construction activities would also generate total suspended particulate and PM₁₀ emissions as fugitive dust from ground-disturbing activities (e.g., grading, trenching, soil piles) and from combustion of fuels in construction equipment. Fugitive dust emissions would be greatest during the initial site preparation activities and would vary from day to day depending on the construction phase, level of activity, and prevailing weather conditions. The quantity of uncontrolled fugitive dust emissions from a construction site is proportional to the area of land being worked and the level of construction activity. Construction activities would incorporate best management practices (BMPs) and control measures to minimize fugitive particulate matter emissions. Additionally, construction workers commuting daily to and from the construction site in their personal vehicles would result in criteria pollutant emissions. **Appendix D** contains detailed calculations and the assumptions used to estimate the air quality emissions from construction activities.

Operational Impacts. Minor, long-term emissions of criteria pollutants would be expected as a result of firing small arms lead rounds. The amount of emissions generated from small arms firing is dependent on the type and quantity of ammunition rounds fired. **Table 3-8** summarizes the estimated air quality emissions from operational activities. The estimated emissions from the Proposed Action would represent a minor percentage of the air emissions inventory locally in Niagara County and would represent a negligible percentage of the air emissions inventory regionally within the NFIAQCR.

Table 3-8. Estimated Air Emissions Resulting from Operational Activities

Small Arms Type - Ammunition Type	Number of Rounds per Year	CO (lbs/Year)	Lead (lbs/Year)
M-240B - 7.62 mm	18,000	4.61	0.57
M-870 - 12 Gauge (00 buck)	150	0.02	0.01
M-249/M-16/M-4 -5.56 mm	66,000	10.49	1.32
M-9/M-11 -9 mm	20,000	0.61	0.37
Total	104,150	15.73	2.26

Note: mm = millimeter

The primary emissions from small arms firing include CO and lead. CO is emitted as a combustion by-product from the detonation of the energetic material inside the ammunition. Lead emissions typically occur in two ways. First, the energetic material (typically the primer portion) in most small arms

ammunition usually includes a small amount of a lead ingredient, such as lead styphnate or lead azide, which can be emitted into the atmosphere when the ammunition is fired. Second, the projectile (slug) that is fired at the target usually contains lead (except in cases where “green ammo” is used). A small amount of lead might be released when the projectile impacts the bullet trap. The proposed firing range would be equipped with filters to control lead emissions from the slugs impacting the bullet trap. **Appendix D** contains detailed calculations and the assumptions used to estimate the air quality emissions from small arms firing.

Personnel utilizing the proposed indoor small arms range are assumed to live within the NFIAQCR, so there would be no net increase in criteria pollutants from commuters.

Greenhouse Gas Emissions. The Proposed Action would contribute directly to emissions of greenhouse gases from the combustion of fossil fuels from construction equipment. CO₂ accounts for 92 percent of all greenhouse gas emissions; electric utilities are the primary source of anthropogenic CO₂, followed by transportation. The USEPA estimates that in 1990, gross CO₂ emissions in New York were 75.7 million metric tons of CO₂ equivalents, or 83,444,966 tons of CO₂ equivalents (USEPA undated).

Total CO₂ emissions from the Proposed Action for 2010 were estimated at 597 tons (see **Appendix D** for detailed emissions calculations). Construction activities and operations would have minor adverse contributions to greenhouse gas emissions locally. The Proposed Action would have a negligible contribution towards statewide greenhouse gas inventories.

Summary. As shown in **Tables 3-7** and **3-8**, air quality emissions from the Proposed Action would be minor, and well below the *de minimis* thresholds for Niagara County and would be less than 10 percent of the emissions inventory for NFIAQCR. Therefore, a conformity determination in accordance with 40 CFR 93-153(1) is not required, as the total of direct and indirect emissions from the Proposed Action would not be regionally significant (e.g., the emissions are not greater than 10 percent of the NFIAQCR emissions inventory). **Appendix D** contains detailed calculations and the assumptions used to estimate the air quality emissions from construction and operations of the indoor small arms range.

Alternative Site B

Alternative Site B would have similar impacts as the Proposed Action. Selection of Alternative Site B would have short-term and long-term minor adverse effects on air quality. Air quality emissions from Alternative Site B would be minor, and well below the *de minimis* thresholds for Niagara County and would be less than 10 percent of the emissions inventory for NFIAQCR. Therefore, a conformity determination in accordance with 40 CFR 93-153(1) is not required, as the total of direct and indirect emissions from Alternative Site B would not be regionally significant (e.g., the emissions are not greater than 10 percent of the NFIAQCR emissions inventory). **Appendix D** contains detailed calculations and the assumptions used to estimate the air quality emissions from construction and operations of the indoor small arms range.

No Action Alternative

Under the No Action Alternative, Niagara Falls ARS would not construct the indoor small arms range, which would result in the continuation of the existing condition, as described in **Section 3.4.2**. Therefore, no direct or indirect environmental effects would be expected on local or regional air quality from implementation of the No Action Alternative.

3.5 Safety

3.5.1 Definition of the Resource

A safe environment is one in which there is no, or an optimally reduced, potential for death, serious bodily injury or illness, or property damage. Human safety addresses (1) workers' health and safety during construction and demolition activities, and (2) public safety during construction and demolition activities and during subsequent operations of those facilities.

Construction site safety is largely a matter of adherence to regulatory requirements imposed for the benefit of employees and implementation of operational practices that reduce risks of illness, injury, death, and property damage. The health and safety of onsite military and civilian workers are safeguarded by numerous DOD and USAF regulations designed to comply with standards issued by OSHA and the USEPA. These standards specify the amount and type of training required for industrial workers, the use of protective equipment and clothing, engineering controls, and maximum exposure limits for workplace stressors.

Safety and accident hazards can often be identified and reduced or eliminated. Necessary elements for an accident-prone situation or environment include the presence of the hazard itself together with the exposed (and possibly susceptible) population. The degree of exposure depends primarily on the proximity of the hazard to the population. Activities that can be hazardous include transportation, maintenance and repair activities, and the creation of extremely noisy environments. The proper operation, maintenance, and repair of vehicles and equipment carry important safety implications. Any facility or human-use area with potential explosive or other rapid oxidation process creates unsafe environments for nearby populations. Extremely noisy environments can also mask verbal or mechanical warning signals such as sirens, bells, or horns.

3.5.2 Description of the Affected Environment

All contractors performing construction activities are responsible for following ground safety regulations and worker compensation programs and are required to conduct construction and related activities in a manner that does not pose any risks to workers or personnel. Industrial hygiene programs address exposure to hazardous materials, use of personal protective equipment, and availability of Material Safety Data Sheets. Industrial hygiene is the responsibility of contractors, as applicable. Contractor responsibilities are to review potentially hazardous workplace operation; to monitor exposure to workplace chemical (e.g., asbestos, lead, hazardous material), physical (e.g., noise propagation), and biological (e.g., infectious waste) agents; to recommend and evaluate controls (e.g., ventilation, respirators) to ensure personnel are properly protected or unexposed; and to ensure a medical surveillance program is in place to perform occupational health physicals for those workers subject to any accidental chemical exposures.

There are emergency services (i.e., police, fire, and ambulance services) in the City of Niagara Falls approximately 5 miles southwest of Niagara Falls ARS. Therefore, potential emergency situations can be responded to quickly. A 300-to-400-foot safety arc surrounds the installation's munitions storage area associated with Building 820. In addition, a 100-foot safety radii surrounds the petroleum storage facilities associated with Buildings 420, 421, and 921 (Niagara Falls ARS 1998a).

Both the Proposed Action (Site A) and Alternative Site B are within the boundaries of Niagara Falls ARS and are not open to public access. Niagara Falls ARS personnel currently use an offsite location for small arms training as there is no such facility to support this training on-installation. The Proposed Action and Alternative Site B are located in areas classified as open space (see **Section 3.3.2**).

3.5.3 Environmental Consequences

Evaluation Criteria

Impacts were assessed based on direct effects from construction activities, as well as secondary effects, such as environmental contamination. The extent of these secondary effects is situationally dependent and difficult to quantify.

Proposed Action – Site A

Short-term, minor adverse effects on safety would be expected from construction activities. Implementation of the Proposed Action would slightly increase the short-term risk associated with construction contractors performing work at Niagara Falls ARS during the normal workday because the level of such activity would increase. Construction contractors would be required to establish and maintain safety programs. The Proposed Action would not pose a safety risk to installation personnel or to activities at the installation. No off-installation safety impacts would be expected from construction activities associated with the Proposed Action. Work areas surrounding construction activities would be fenced and appropriate signs posted to further reduce safety risks to outside personnel. No impacts regarding fire hazards or public safety are expected to occur within the vicinity of the small arms range from construction-related activities planned as part of the Proposed Action.

The facility would be designed and constructed in accordance with ETL 08-11, *Small Arms Range Design and Construction*, which is in accordance with AFI 32-1023, *Design and Construction Standards and Execution of Facility Construction Projects* and AFI 36-2226, *Combat Arms Program*. Construction would comply with all applicable fire and safety codes and the Proposed Action would meet all applicable antiterrorism/force protection requirements. It is assumed that a Health and Safety Plan would be completed prior to commencing construction activities on the small arms range.

The Proposed Action would have minor long-term beneficial effects on the safety of personnel by allowing them to train on-installation instead of travelling off-installation for small arms training.

Alternative Site B

The safety impacts associated with Alternative Site B would be expected to be the same as those described for the Proposed Action. Although Site B is adjacent to Building 830, which stores hazardous materials, safety measures are in place via the HAZMAT plan that would lessen any potential safety risk, such as the risk of a mishap or explosion. These safety measures include keeping Building 830 locked at all times and secured during off-duty hours. Firing activities at the range would not be expected to cause an explosion, nor would any materials be stored at the range which could cause an explosion. Therefore the risk of activities at the range potentially causing a hazardous explosion at Building 830 is very low.

No Action Alternative

Long-term minor adverse impacts on safety would be expected under the No Action Alternative due to the continued use of an off-installation location for small arms training. Continued use of an off-installation location would pose potential safety risks to installation personnel travelling to a training location. In addition, the No Action Alternative would impact the ability of Niagara Falls ARS personnel to meet mandatory training requirements for military personnel in accordance with AFI 32-1023, *Design and Construction Standards and Execution of Facility Construction Projects*; and AFI 36-2226, *Combat Arms Program*.

3.6 Water and Soil Resources

3.6.1 Definition of the Resource

3.6.1.1 Water Resources

Hydrology consists of the redistribution of water through the processes of evapotranspiration, surface runoff, and subsurface flow. Hydrology results primarily from temperature and total precipitation that determine evapotranspiration rates, topography which determines rate and direction of surface flow, and soil and geologic properties that determine rate of subsurface flow and recharge to the groundwater reservoir. Groundwater consists of subsurface hydrologic resources. It is an essential resource that functions to recharge surface water and is used for drinking, irrigation, and industrial processes. Groundwater typically can be described in terms of depth from the surface, aquifer or well capacity, water quality, recharge rate, and surrounding geologic formations.

Surface water resources generally consist of wetlands, lakes, rivers, and streams. Surface water is important for its contributions to the economic, ecological, recreational, and human health of a community or locale.

Waters of the United States are defined within the Clean Water Act (CWA), as amended, and jurisdiction is addressed by the USEPA and the U.S. Army Corps of Engineers (USACE). These agencies assert jurisdiction over (1) traditional navigable waters, (2) wetlands adjacent to navigable waters, (3) nonnavigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-around or have continuous flow at least seasonally (e.g., typically 3 months), and (4) wetlands that directly abut such tributaries. Section 404 of the CWA authorizes the Secretary of the Army, acting through the Chief of Engineers, to issue permits for the discharge of dredge or fill into waters of the United States including wetlands. Encroachment into waters of the United States and wetlands requires a permit from the state and the Federal government. An encroachment into wetlands or other “waters of the United States” resulting in displacement or movement of soil or fill materials has the potential to be viewed as a violation of the CWA if an appropriate permit has not been issued by the USACE. In New York, the USACE has primary jurisdictional authority to regulate wetlands and waters of the United States.

A water body can be deemed impaired if water quality analyses conclude that exceedances of water quality standards, established by the CWA, occur. The CWA requires that states establish a Section 303(d) list to identify impaired waters and establish Total Maximum Daily Loads (TMDLs) for the sources causing the impairment. A TMDL is the maximum amount of a substance that can be assimilated by a water body without causing impairment.

In addition, wetlands are protected under EO 11990, *Protection of Wetlands*, the purpose of which is to reduce adverse impacts associated with the destruction or modification of wetlands. Deputy Assistant Secretary of the Air Force -Environment, Safety, and Occupational Health or another designated official must sign a finding of no practicable alternative (FONPA) before any action within a Federal wetland may proceed as specified in Secretary of the Air Force Order 780.1. The recently revised AFI 32-7064 grants approval authority to the chairperson of the Headquarters AFRC Environmental Protection Committee for wetlands encroachment FONPAs. In preparing a FONPA, the installation must consider the full range of practicable alternatives that will meet justified program requirements, are within the legal authority of the U.S. Army, meet technology standards, are cost-effective, do not result in unreasonable adverse environmental impacts, and other pertinent factors. Once the practicality of alternatives has been fully assessed, only then should a statement regarding the FONPA be made into the associated FONSI or record of decision.

Wetlands are also protected in New York State under Article 24 of the New York Environmental Conservation Law, commonly known as the Freshwater Wetlands Act (the Act or Article 24). Freshwater wetlands, as defined by the Act, are wetland areas 12.4 acres or larger (except under special circumstances). The Act protects the wetland as well as 100 feet of protective buffer surrounding it.

As a result of the above-mentioned state and Federal regulations, it is the responsibility of the USAF to identify and locate jurisdictional waters of the United States (including wetlands) occurring on USAF installations where these resources have the potential to be impacted by installation activities. Such impacts include construction of roads, buildings, runways, taxiways, navigation aids, and other appurtenant structures; or activities as simple as culvert crossings of small intermittent streams, rip-rap placement in stream channels to curb accelerated erosion, and incidental fill and grading of wet depressions.

Floodplains are areas of low-level ground present along rivers, stream channels, or coastal waters. The living and nonliving parts of natural floodplains interact with each other to create dynamic systems in which each component helps to maintain the characteristics of the environment that supports it. Floodplain ecosystem functions include natural moderation of floods, flood storage and conveyance, groundwater recharge, nutrient cycling, water quality maintenance, and a diversity of plants and animals. Floodplains provide a broad area to spread out and temporarily store floodwaters. This reduces flood peaks and velocities and the potential for erosion. In their natural vegetated state, floodplains slow the rate at which the incoming overland flow reaches the main water body (FEMA 1986).

Floodplains are subject to periodic or infrequent inundation due to rain or melting snow. Risk of flooding typically hinges on local topography, the frequency of precipitation events, and the size of the watershed above the floodplain. Flood potential is evaluated by the Federal Emergency Management Agency (FEMA), which defines the 100-year floodplain. The 100-year floodplain is the area that has a 1 percent chance of inundation by a flood event in a given year. Certain facilities inherently pose too great a risk to be in either the 100- or 500-year floodplain, such as hospitals, schools, or storage buildings for irreplaceable records. Federal, state, and local regulations often limit floodplain development to passive uses, such as recreational and preservation activities, to reduce the risks to human health and safety.

EO 11988, *Floodplain Management*, requires Federal agencies to determine whether a proposed action would occur within a floodplain. This determination typically involves consultation of FEMA Flood Insurance Rate Maps (FIRMs), which contain enough general information to determine the relationship of the project area to nearby floodplains. EO 11988 directs Federal agencies to avoid floodplains unless the agency determines that there is no practicable alternative.

3.6.1.2 Soil Resources

Soils are the unconsolidated materials overlying bedrock or other parent material. Soils typically are described in terms of their complex type, slope, and physical characteristics. Differences among soil types in terms of their structure, elasticity, strength, shrink-swell potential, and erosion potential affect their abilities to support certain applications or uses. In appropriate cases, soil properties must be examined for their compatibility with particular construction activities or types of land use.

Prime farmland is protected under the Farmland Protection Policy Act (FPPA) of 1981. Prime farmland is defined as land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is also available for these uses. The soil qualities, growing season, and moisture supply are needed for a well-managed soil to produce a sustained high yield of crops in an economic manner. The land could be cropland, pasture, rangeland, or other land, but not urban built-up land or water. The intent of the FPPA is to minimize the extent that Federal programs

contribute to the unnecessary conversion of farmland to nonagricultural uses. The Act also ensures that Federal programs are administered in a manner that, to the extent practicable, will be compatible with private, state, and local government programs and policies to protect farmland.

The implementing procedures of the FPPA and National Resources Conservation Service (NRCS) require Federal agencies to evaluate the adverse effects (direct and indirect) of their activities on prime and unique farmland, as well as farmland of statewide and local importance, and to consider alternative actions that could avoid adverse effects. Determination of whether an area is considered prime or unique farmland and potential impacts associated with a proposed action is based on preparation of the farmland conversion impact rating form AD-1006 for areas where prime farmland soils occur and by applying criteria established at Section 658.5 of the FPPA (7 CFR 658). The NRCS is responsible for overseeing compliance with the FPPA and has developed the rules and regulations for implementation of the act (see 7 CFR Part 658, 5 July 1984).

3.6.2 Description of the Affected Environment

3.6.2.1 Water Resources

Hydrology. The topography in the vicinity of Niagara Falls ARS is flat, dipping slightly to the south, with extremes in elevation of 578 to 600 feet above sea level. The installation is in the Lake Erie-Niagara River Basin. There are about 5,390 miles of rivers and streams and 24 large lakes, ponds, and reservoirs covering 1,098 acres in the basin (NYSDEC 2009a).

Groundwater. Aquifers underlying the installation are composed of carbonate rocks, consistent with the geology of the Central Lowland province of New York. Groundwater storage and movement occurs to the east-southeast, primarily through secondary fractures. Groundwater quality is poor due to the presence of dissolved minerals such as calcite, dolomite, gypsum, and halite. Water quality deteriorates with depth in the Lake Erie-Niagara River Basin. No potable water wells are present at Niagara Falls ARS, but groundwater monitoring wells are present throughout the installation (Niagara Falls ARS 2008c, Niagara Falls ARS 2009a). Groundwater is sampled semi-annually as VOCs have been detected in some wells. This is discussed further in **Section 3.8.2**.

Surface Water and Waters of the United States. The major surface water feature at Niagara Falls ARS is Cayuga Creek. Cayuga Creek enters the installation from the east at the Walmore Road gate and flows west along the southern border of the installation, dividing the Niagara ARS from the Niagara Falls IAP. Cayuga Creek ultimately drains into the Niagara River, upstream of American and Horseshoe Falls. In addition to Cayuga Creek, two artificial tributaries convey storm water off the installation. The primary tributary directing storm water off-installation originates in the northwestern portion of the installation and flows south through the center of Niagara Falls ARS. The secondary tributary flows north to south along the western end of the airfield. One drainage ditch is located to the southeast of the site of the Proposed Action, and three small drainage ditches are within the area associated with Alternative Site B.

Seven outfalls collect storm water from impervious surfaces. These outfalls are monitored on a quarterly basis by Niagara Falls ARS for water quality. NYSDEC issued a baseline General State Pollutant Discharge Elimination System (SPDES) Permit for Storm Water Discharges Associated with Industrial Activity in June 1993. Niagara Falls ARS was accepted for coverage under this General Permit (SPDES Permit No. NYR00B522) on 30 November 1994. The SPDES general permit (GP-93-05) expired on 1 August 1998, and was extended by NYSDEC as GP-98-03 until 31 October 1998. The permit has been reissued as GP-98-03 for a 5-year period effective 1 November 1998, and is substantially the same as the previous permit. The current permit was administratively extended until a new permit could be issued. The General Permit has since been renewed and revised so it more closely reflects the USEPA's Multi-

Sector General Permit for Stormwater Discharges Associated with Industrial Activity. This revised General Permit (renumbered as GP-0-06-002) became effective on 27 March 2007 and will expire 27 March 2012. The General Permit requires quarterly visual inspections of storm water, annual dry weather flow inspections at storm water outfalls, and submittal of an annual certification report form. NYSDEC also issued a General Permit for Storm Water Discharges Associated with Construction Activities (Permit No. NYR10E212, issued in April 2002). An active Storm Water Pollution Prevention Plan (SWPPP) is currently in place to minimize the effects of storm water discharge into surface waters. The General and Construction Permits with coverage notices are provided in Appendix B and Appendix C of the SWPPP, respectively (Niagara Falls ARS 2008d).

Wetlands. Wetlands on the installation were identified following the procedures defined in the 1987 USACE *Wetlands Delineation Manual* (USACE 1987). Delineation of jurisdictional wetlands was based on the occurrence of the following three parameters: hydrophytic vegetation, hydric soils, and wetland hydrology. A letter from the USACE Buffalo District states that this delineation is valid for 5 years from October 2003. The USFWS is currently conducting an updated wetland delineation for Niagara Falls ARS (Niagara Falls ARS 2009a).

An emergent marsh/shrub wetland covering 72 acres west of the Niagara Falls IAP main runway was delineated in 1992 by NYSDEC. A small portion of this New York State wetland is on Niagara Falls ARS property. Currently, Niagara Falls ARS has a permit (Permit 90-87-0946) from NYSDEC for management of this wetland area and its 100-foot buffer west of Runway 10L-28R. This permit allows the 914 AW to remove emergent trees and brush and to periodically mow approximately 4 acres of the wetland and its 100-foot buffer zone within the installation boundaries (Niagara Falls ARS 2004).

A July 1997 survey of wetlands at Niagara Falls ARS identified approximately 38 acres of jurisdictional wetlands or waters of the United States on the installation. A reevaluation of wetland boundaries and assessment of wetland functions was conducted in 2004. USFWS identified nine Federal jurisdictional wetlands covering approximately 37.47 acres within the Niagara Falls ARS. Most of the wetlands are in the southwestern portion of the Niagara Falls ARS and are classified as palustrine scrub-shrub/emergent wetlands. Although impacted by ongoing vegetation maintenance and by historic filling and grading, these wetlands do provide some functions such as alteration of flood flow, stormwater retention, and wildlife habitat. The proximity of these separate wetlands to each other and a New York State wetland can also provide refuge and act as a corridor for wildlife, and possibly direct them away from the runways and taxiways. The wetlands in the northern and northeastern portion of Niagara Falls ARS primarily provide alteration of flood flow and stormwater retention. The high level of disturbance (primarily caused by mowing activities) and close proximity to buildings and recreational areas reduces the ability of the wetlands to provide quality wildlife habitat (Niagara Falls ARS 2005).

No wetlands have been mapped within or adjacent to Alternative Site B. Wetland W (a Federal jurisdictional wetland) has been delineated adjacent and to the west of the site of the Proposed Action (Niagara Falls ARS 2004). Wetland W extends outside the installation boundary to the north. This wetland is connected to a drainage swale that flows east and south to Cayuga Creek. It is bounded on two sides by a raised railroad bed and is approximately 1.57 acres in size. The primary value of Wetland W is floodflow alteration. Minor functions include groundwater recharge, sediment/toxicant retention, and wildlife habitat (Niagara Falls ARS 2004).

As discussed in **Section 3.6.1.1**, the New York Freshwater Wetlands Act defines a freshwater wetland as measuring at least 12.4 acres in size, thus Wetland W adjacent to Site A would not qualify, and the 100 feet of protective buffer provided under the Act would not be required. **Figure 3-2** shows the approximate boundaries of jurisdictional wetlands identified during the 2004 wetlands delineation. As

shown on **Figure 3-2**, the Proposed Action Site and Alternative Site B would not be constructed within the delineated wetlands.

Floodplains. Proposed 2008 FEMA FIRMs covering the Niagara Falls ARS, Community Panel No. 36063C0327E shows that lands adjacent to Cayuga Creek and its tributaries are within the mapped 100- and 500-year floodplains. The remainder of the installation composes an area of minimal flooding (FEMA 2008, FEMA undated). Neither the Proposed Action Site nor Alternative Site B are within the 100- or 500-year floodplain. **Figure 3-2** shows the locations of the floodplains on Niagara Falls ARS. This includes the area to the west of the runway and through the central portion of the installation.

3.6.2.2 Soil Resources

The U.S. Department of Agriculture's NRCS mapped and classified the installation's soils in 2006. Niagara Falls ARS occupies level to gently sloping land areas dominated by two soils mapping units. Primary soil series within these mapping units are the Odessa silty clay loam and the Lakemont silty clay loam. These soils formed in glacial material deposited during and shortly after the Ice Age (the Pleistocene epoch, approximately 1.8 million to 10,000 years ago). The Odessa soil, a moderately fine textured soil, covers a majority of the area to the north of Cayuga Creek. It is somewhat poorly drained, has moderately low permeability, and a seasonably high water table at 6 to 12 inches below ground surface. The remainder of the installation is underlain by the Lakemont soil series, a moderately coarse and medium-textured soil that is poorly to very poorly drained, with moderately low permeability at the surface and low permeability in the subsoil. The water table is seasonably high at or immediately below ground surface. The capacity of both soils to retain water is high, and the erosion potential is minimal (NRCS 2006). Approximately half of the installation is overlain by pavement and other impermeable surfaces. If drained, the Odessa soil would be considered a prime farmland soil. However, these soils are not currently drained and would not be drained under the Proposed Action, and therefore, would be not considered prime farmland soils as defined by the FPPA.

3.6.3 Environmental Consequences

Evaluation Criteria

Evaluation criteria for effects on water resources are based on water availability, quality, and use; existence of floodplains; and associated regulations. A proposed action would have significant effects on water resources if it were to do one or more of the following:

- Substantially reduce water availability or supply to existing users
- Overdraft groundwater basins
- Exceed safe annual yield of water supply sources
- Substantially adversely affect water quality
- Endanger public health by creating or worsening health hazard conditions
- Threaten or damage unique hydrologic characteristics
- Violate established laws or regulations adopted to protect water resources.

The potential effect of flood hazards on a proposed action is important if such an action occurs in an area with a high probability of flooding.

Minimization of soil erosion is considered when evaluating potential effects of a proposed action on soil resources. Generally, adverse effects can be avoided or minimized if proper construction techniques, erosion-control measures, and structural engineering design are incorporated into project development.

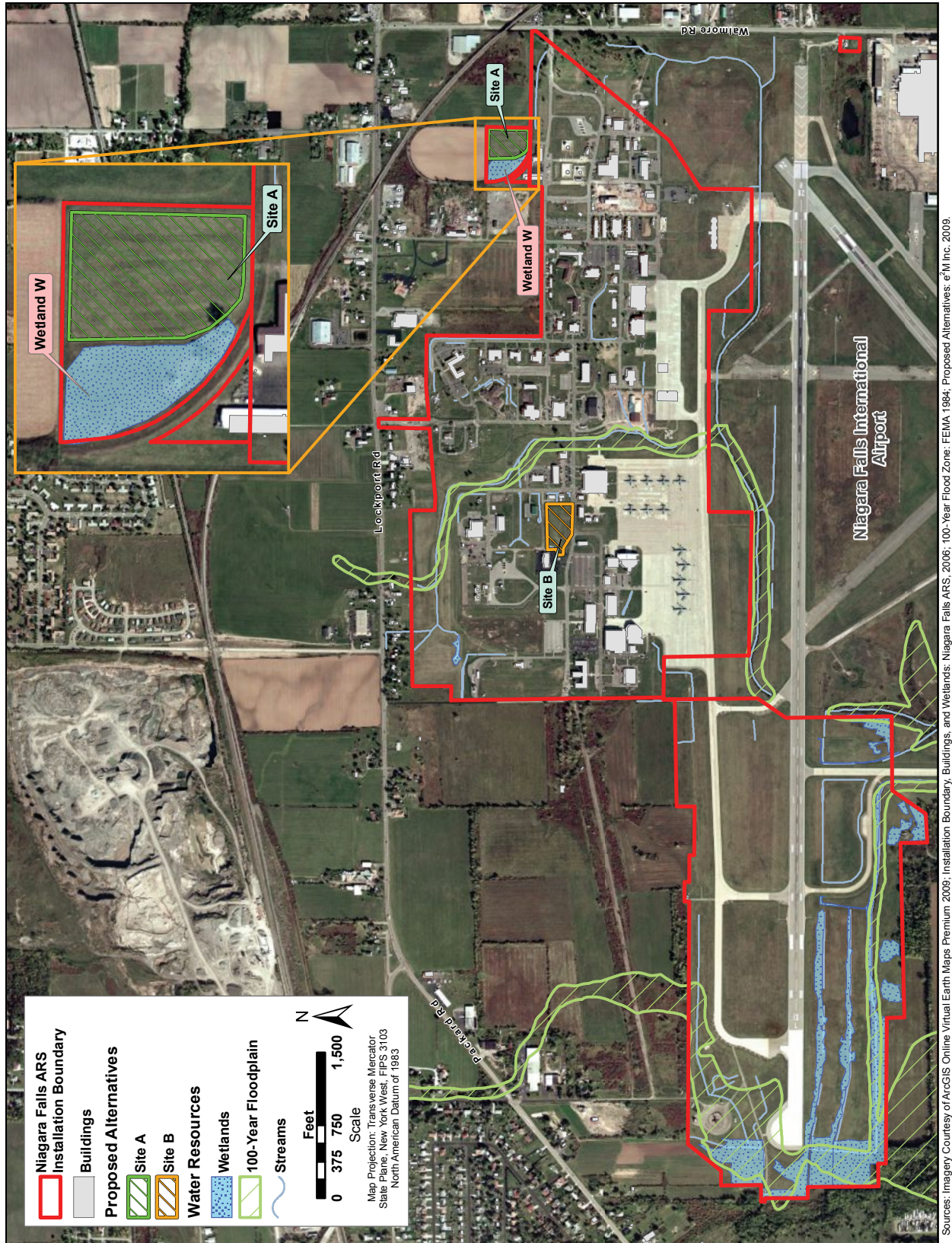


Figure 3-2. Water Resources at Niagara Falls ARS

Effects on soils would be significant if they would alter the soil composition, structure, or function (including prime farmland and other unique soils) within the environment.

3.6.3.1 Water Resources

Proposed Action – Site A

Implementation of the Proposed Action has the potential to result in long-term minor adverse impacts on water resources. Site A is directly northwest of a drainage ditch which could collect storm water runoff. Storm water runoff volume and velocity would be expected to increase due to the increase in impervious surface. This increased runoff could impact the surface water quality of the receiving water body. However, the Niagara Falls ARS *Erosion and Sedimentation Control Manual* and *Storm Water Pollution Prevention Plan* describe BMPs to prevent surface water degradation. Adherence to standard engineering practices and applicable codes and ordinances would typically reduce storm water runoff-related impacts to a level of insignificance.

A 1999 special report by the Buffalo District of the USACE, *Summary of Hydrology for the Niagara Falls Air Reserve Station*, indicated that development along Cayuga Creek at Niagara Falls ARS only increased runoff by 0.4 percent (USACE 1999). The modeling indicated that the installation has very little impact on peak discharge of Cayuga Creek downstream. Further development at Niagara Falls would not add a significant area of impervious surfaces that would affect downstream water quantity (Niagara Falls ARS 2005).

No impacts to the hydric soils or hydrophytic vegetation would be anticipated to occur within Wetland W (the 1.57-acre wetland directly west of Site A) as a result of the Proposed Action. No impacts would be expected on these wetland indicators because the footprint of Wetland W would not be expected to be impacted by the Proposed Action (see **Section 3.6.2.1** and **Figure 3-2**). Excavation or trenching could be required to install utilities at the Proposed Action Site; these activities would be expected to have a short-term negligible impact on the drawdown of the water table in the vicinity of the site. The value of Wetland W as wildlife habitat is limited by its small size, adjacent uplands, and proximity to parking areas and office buildings (Niagara Falls ARS 2004).

Short-term minor adverse effects on Wetland W from stormwater runoff could occur during construction of the proposed facility, while long-term minor adverse effects could occur during facility operation. As stated in **Section 3.6.2.1**, no construction would occur within the delineated boundary of Wetland W. Indirect impacts on the wetland could occur if suspended sediments and vehicle fluids on impervious surfaces are washed into the wetland during storm events. However, proper implementation of BMPs and adherence to the SWPPP as part of the project design would prevent any adverse impacts on Wetland W. Adverse effects on Wetland W from stormwater runoff could be mitigated through proper grading of Site A during facility construction. Site A could be graded so that stormwater runoff would be quickly captured by a strategically-located stormwater treatment facility (such as a stormwater-retention pond or other appropriate BMPs) instead of flowing west into the adjacent wetland. The stormwater treatment facility would provide treatment of the runoff, and then the treated water would be released in the sub-basin where Wetland W resides, thereby preventing any adverse impact to the surficial hydrology of Wetland W.

Alternative Site B

Implementation of Alternative Site B has the potential to result in long-term minor adverse impacts on water resources. Potential impacts of the small arms range at Alternative Site B would be similar to those of the Proposed Action discussed above. Three small drainage ditches are present at this site and would

collect storm water runoff from the small arms range and the parking area. Implementation of BMPs described in the Niagara Falls ARS SWPPP would prevent surface water degradation and reduce storm water runoff.

No Action Alternative

Under the No Action Alternative, there would be no change from existing conditions at the installation, as described in **Section 3.6.2.1**.

3.6.3.2 Soil Resources

Proposed Action – Site A

Under the Proposed Action, short-term, minor adverse effects on sedimentation and erosion would be expected. According to the NRCS web soil survey, the Odessa silty clay loam that underlies the site of the Proposed Action is very limited for small commercial buildings due to the depth to saturation and the shrink-swell potential of the soil (NCRS 2006). A site-specific soil survey would be necessary to ascertain if engineering limitations exist.

Under the Proposed Action, construction activities such as grading, excavating, and recontouring of the soil would result in soil disturbance. Implementation of BMPs during construction would limit potential impacts resulting from construction activities. BMPs are established in the Niagara Falls ARS *Erosion and Sedimentation Control Manual* (Niagara Falls ARS 1998b). Measures for reducing erosion and sedimentation associated with construction of the Proposed Action are found in the *Storm Water Pollution Prevention Plan* (Niagara Falls ARS 2008d). Fugitive dust associated with construction activities would be minimized by watering and soil stockpiling, thereby reducing to negligible levels the total amount of soil exposed. Standard erosion controls (e.g., silt fencing, sediment traps, application of water sprays, and revegetation at disturbed areas) would also reduce potential impacts associated with soil erosion and sedimentation.

Alternative Site B

Selection of Alternative Site B has the potential to result in short-term minor adverse impacts on soil resources. According to the NRCS web soil survey, this site is also underlain by the Odessa silty clay loam and would be very limited for building small commercial structures due to the depth to saturation and presence of shrink-swell soils (NCRS 2006). A site specific soil survey would be necessary to ascertain if engineering limitations exist.

Impacts from construction of the small arms range at Alternative Site B would be similar to those described above for the Proposed Action. BMPs would be implemented during construction to limit potential impacts resulting from construction activities on soil resources.

No Action Alternative

Under the No Action Alternative, there would be no change from existing conditions at the installation, as described in **Section 3.6.2.2**.

3.7 Biological Resources

3.7.1 Definition of the Resource

Biological resources include native or naturalized plants and animals and the habitats (e.g., wetlands, forests, and grasslands) in which they exist. Protected and sensitive biological resources include federally listed (endangered or threatened), proposed, and candidate species, and designated or proposed critical habitat; species protected under other Federal laws (see **Appendix A**); species of concern managed under Conservation Agreements or Management Plans; and state-listed species.

Under the Endangered Species Act (ESA) (16 U.S.C. 1536), an “endangered species” is defined as any species in danger of extinction throughout all or a significant portion of its range. A “threatened species” is defined as any species likely to become an endangered species in the foreseeable future. USFWS also maintains a list of species considered to be candidates for possible listing under the ESA. Although candidate species receive no statutory protection under the ESA, the USFWS has attempted to advise government agencies, industry, and the public that these species are at risk and might warrant protection under the Act.

3.7.2 Description of the Affected Environment

Vegetation

Niagara Falls ARS lies within the Beech-Maple Forest Section of the Eastern Deciduous Forest Province. This ecoregion is characterized by temperate deciduous forests. Niagara Falls ARS was historically a mixed hardwood forest. The forest was logged during the 1800s and cleared for agricultural uses. Farming and urban development have resulted in very limited forest acreage in the vicinity of the installation (Niagara Falls ARS 1998b). Most of the installation is urbanized and the original vegetation has been removed or significantly altered by development, construction, landscaping, and other disturbances. Consequently, there is very little opportunity for historic native plant communities to occur on Niagara Falls ARS. The vegetative species diversity at Niagara Falls ARS is relatively low (Niagara Falls ARS 1998c) and there have been no observations made of any unique native vegetative species occurring on the installation (Niagara Falls ARS 1998b).

Turf grasses and various broad-leaf weeds are the predominant vegetation type on Niagara Falls ARS, including the Proposed Action Site and Alternative Site B. Grass varieties consist of common introduced species, including Kentucky bluegrass (*Poa pratensis*), tall fescue (*Festuca arundinacea*), orchardgrass (*Dactylis glomerata*), Italian ryegrass (*Lolium multiflorum*), red top (*Agrostis alba*), creeping red fescue (*Festuca rubra*), colonial bent grass (*Agrostis tenuis*), and timothy (*Phleum pratense*). A variety of shrubs and trees, mostly introduced species, are also present on Niagara Falls ARS. Shrub species that are common on the installation include blue pfitzer juniper (*Chinesis glauca hetzel*), pyramidal yew (*Taxus caspidata capitata*), and spreading yew (*Taxus caspidata*). Tree species that are common on the installation include white pine (*Pinus strobus*), Scotch pine (*Pinus sylvestris*), green ash (*Fraxinus lanceolata*), red maple (*Acer rubrum*), and Lombardy poplar (*Populus nigra italica*) (Niagara Falls ARS 1998b).

Wildlife

Common mammals on Niagara Falls ARS include the meadow vole (*Microtus pennsylvanicus*), coyote (*Canus lutrans*), white-tailed deer (*Odocoileus virginianus*), beaver (*Castor canadensis*), deer mouse (*Peromyscus maniculatus*), eastern cottontail rabbit (*Sylvilagus floridanus*), muskrat (*Ondatra zibethica*),

raccoon (*Procyon lotor*), red fox (*Vulpes vulpes*), striped skunk (*Mephitis mephitis*), and woodchuck (*Marmota monax*) (Niagara Falls ARS 2001a).

Sixty-one native bird species have been identified on Niagara Falls ARS during the 2007 breeding season (May through August) and November 1997 through July 1999 (see **Table 3-9**). Of these species, 29 are either grassland obligates, are common to grassland habitats, or occasionally occur in grassland habitats. Seventeen of these species are either wetland obligates or are common to wetland habitats. The most common bird species at Niagara Falls ARS include the red-wing blackbird (*Agelaius phoeniceus*), song sparrow (*Melospiza melodia*), gulls (*Larus spp.*), eastern meadowlark (*Sturnella magna*), savannah sparrow (*Passerculus sandwichensis*), rock dove (*Columbia livia*), mourning dove (*Zenaida asiatica*), killdeer (*Charadrius vociferous*), American crow (*Corvus brachyrhynchos*), and great blue heron (*Ardea herodias*). Common species on the installation during winter months include the mallard (*Anas platyrhynchos*), American black duck (*A. rubripes*), Canada goose (*Branta canadensis*), and great blue heron. Cayuga Creek provides winter habitat for these species (Niagara Falls ARS 2001a).

Six species of reptiles and amphibians were observed during the USFWS 1997 to 1999 surveys, including the snapping turtle (*Chelydras serpentina*), midland painted turtle (*Chrysemys picta marginata*), eastern garter snake (*Thamophis sirtalis*), northern leopard frog (*Rana pipiens*), wood frog (*Rana sylvatica*), and eastern box turtle (*Terrapene carolina carolina*). Wood frogs and northern leopard frogs generally occur in the southwestern portion of the property in the wetland area and along edges of Cayuga Creek and ditches. Snapping turtles and painted turtles were commonly seen in areas throughout Cayuga Creek and the ditches. The eastern garter snake was commonly found in the grassland areas and along drainage ditches. One unconfirmed sighting of an eastern box turtle was made in 1998 beside Cayuga Creek (Niagara Falls ARS 2001a). No reptile or amphibian species were found in sampling sites within Cayuga Creek during May, July, and August 2007 or September 2008 USFWS surveys (Niagara Falls ARS 2009b).

Preliminary information gathered suggests that the majority of the habitat present on Niagara Falls ARS has a moderate value in relation to its ability to support the maximum native species richness of birds, mammals, reptiles, and amphibians; however, USFWS and NYSDEC recognize that fish and wildlife opportunities at Niagara Falls ARS are limited because the installation is relatively small, confined, and situated in an industrial and agricultural area. The potential fish habitat on Niagara Falls ARS consists of Cayuga Creek and its unnamed tributaries. Intermittent flow and limited aquatic habitat attribute to the relatively low value of these waterways in relation to their regional ability to support aquatic species (Niagara Falls ARS 1998b).

Grassland communities are the predominant habitat type on the installation. NYSDEC has indicated that the installation's grassland habitat has regional importance for supporting a variety of grassland bird species (Niagara Falls ARS 1998b). The semi-improved grassy areas adjacent to taxiways are a vast area of grassland that attract many bird species including several New York State threatened, endangered and special concern grassland species. Wetland communities, although limited, are another habitat type on the installation, and are the preferred habitat for the majority of the freshwater wading bird populations in Western New York (Niagara Falls ARS 1998b). The Proposed Action Site and Alternative Site B are also composed primarily of grassland habitat; and the Proposed Action Site is immediately adjacent to an emergent wetland identified as Wetland W (Niagara Falls ARS 2004).

Table 3-9. Native Bird Species Observed at Niagara Falls ARS during 2007 Breeding Season (May through August) and November 1997 to July 1999

Common Name	Scientific Name
American bittern ¹	<i>Botaurus lentiginosus</i>
American black duck ¹	<i>Anas rubripes</i>
American coot ¹	<i>Fulica americana</i>
American crow	<i>Corvus brachyrhynchos</i>
American goldfinch ²	<i>Carduelis tristis</i>
American kestrel ²	<i>Falco sparverius</i>
American robin ²	<i>Turdus migratorius</i>
American tree sparrow ^{1,2}	<i>Spizella arborea</i>
American woodcock ¹	<i>Scolopax minor</i>
Baltimore oriole	<i>Icterus galbula</i>
Bank swallow ^{1,2}	<i>Riparia riparia</i>
Barn swallow ²	<i>Hirundo rustica</i>
Belted kingfisher	<i>Ceryle alcyon</i>
Black-capped chickadee	<i>Poecile atricapilla</i>
Black-crowned night-heron ¹	<i>Nycticorax nycticorax</i>
Blue jay	<i>Cyanocitta cristata</i>
Bobolink ²	<i>Dolichonyx oryzivorus</i>
Canada goose ^{1,2}	<i>Branta canadensis</i>
Cedar waxwing	<i>Bombycilla cedrorum</i>
Chipping sparrow ²	<i>Spizella passerina</i>
Common grackle ²	<i>Quiscalus quiscula</i>
Common yellowthroat ^{1,2}	<i>Geothlypis trichas</i>
Eastern kingbird ²	<i>Tyrannus tyrannus</i>
Eastern meadowlark ²	<i>Sturnella magna</i>
Eastern phoebe	<i>Sayornis phoebe</i>
Eastern towhee	<i>Pipilo erythrophthalmus</i>
Field sparrow ²	<i>Spizella pusilla</i>
Grasshopper sparrow ²	<i>Ammodramus savannarum</i>
Gray catbird	<i>Dumetella carolinensis</i>
Great blue heron ¹	<i>Ardea herodias</i>
Great egret ¹	<i>Ardea alba</i>
Green heron ¹	<i>Butorides virescens</i>
Horned lark ²	<i>Eremophila alpestris</i>
House wren	<i>Troglodytes aedon</i>
Killdeer ²	<i>Charadrius vociferus</i>
Mallard ¹	<i>Anas platyrhynchos</i>
Mourning dove ²	<i>Zenaida macroura</i>
Northern cardinal	<i>Cardinalis cardinalis</i>

Common Name	Scientific Name
Northern flicker	<i>Colaptes auratus</i>
Northern harrier ²	<i>Circus cyaneus</i>
Northern mockingbird	<i>Mimus polyglottos</i>
Northern rough-winged swallow	<i>Stelgidopteryx serripennis</i>
Osprey	<i>Pandion haliaetus</i>
Purple finch	<i>Carpodacus purpureus</i>
Red-tailed hawk ²	<i>Buteo jamaicensis</i>
Red-winged blackbird ^{1,2}	<i>Agelaius phoeniceus</i>
Ring-billed gull	<i>Larus delawarensis</i>
Ring-necked pheasant ²	<i>Phasianus colchicus</i>
Rock dove	<i>Columba livia</i>
Savannah sparrow ²	<i>Passerculus sandwichensis</i>
Short-eared owl ²	<i>Asio flammeus</i>
Song sparrow ²	<i>Melospiza melodia</i>
Snowy owl ²	<i>Nyctea scandiaca</i>
Spotted sandpiper ¹	<i>Actitis macularia</i>
Tree swallow ^{1,2}	<i>Tachycineta bicolor</i>
Upland sandpiper ²	<i>Bartramia longicauda</i>
White-throated sparrow	<i>Zonotrichia albicollis</i>
Warbling vireo	<i>Vireo gilvus</i>
Willow flycatcher ²	<i>Empidonax traillii</i>
Wood thrush	<i>Hylocichla mustelina</i>
Yellow warbler ¹	<i>Dendroica petechia</i>

Sources: Niagara Falls ARS 2001a, Niagara Falls ARS 2009b

Notes:

¹ Species is an obligate wetland species or is commonly observed in wetland habitats.

² Species is an obligate grassland species or is commonly observed in grassland habitats.

Threatened and Endangered Species

In 1997, 1998, 2001, and 2007, the USFWS- Lower Great Lakes Fishery Resources Office (LGLFRO) conducted surveys for federally and state-listed endangered, threatened, and special concern species, and inventories of the natural communities and habitats on Niagara Falls ARS (Niagara Falls ARS 1998c, Niagara Falls ARS 2001a, Niagara Falls ARS 2009b). Additional surveys were also conducted by USFWS-LGLFRO in 2001, 2006, and 2008 (Niagara Falls ARS 2009b). No federally threatened or endangered species have been observed on Niagara Falls ARS. Seven New York State-listed bird species have been observed on the installation, including the upland sandpiper (*Bartramia longicauda*), short-eared owl (*Asio flammeus*), northern harrier (*Circus cyaneus*), grasshopper sparrow (*Ammodramus savannarum*), American bittern (*Botaurus lentiginosus*), least bittern (*Ixobrychus exilis*) and horned lark (*Eremophila alpestris*). Due to habitat types on the installation and historic ranges of several species, additional federally and state-listed threatened and endangered species and species of concern have potential to occur on Niagara Falls ARS. USFWS is unable to confirm the presence of the eastern prairie fringed orchid (*Platanthera leucophea*) on the installation; however, historical information indicates that

the species previously inhabited the area (Niagara Falls ARS 2009a). The eastern prairie fringed orchid was not found in sampling sites during May, August, and September 1998 USFWS vegetation surveys (Niagara Falls ARS 1998c). Based on bat surveys conducted in 2007, USFWS-LGLFRO determined that due to the lack of summer roosting habitat and the lack of major food orders, bats in general do not utilize Niagara Falls ARS. The resources that bats require to survive are not provided at the installation, especially the specific resource requirements needed for the Indiana bat (*Myotis sodalist*) and eastern small-footed myotis (*M. leibii*) (Niagara Falls ARS 2009b).

Threatened and endangered species identified as currently occurring, historically occurring, or potentially occurring on Niagara Falls ARS are shown in **Table 3-10**. These species are identified by one of the following categories: occurs, migrates through, or historic range. The term “occurs” refers to a species inhabiting the installation on a continuing basis. The term “migrates through” refers to a species inhabiting the installation on an indiscriminate basis. The term “historic range” is used when Federal or state agencies are unable to confirm the presence of a species on the installation due to insufficient data, but where historical information indicates that the species previously inhabited or migrated through the area.

The vegetation on the Proposed Action Site and Alternative Site B primarily consist of grasses and broad-leaved forbs. The Proposed Action Site is also immediately adjacent to a wetland. Descriptions of grassland-associated state threatened and endangered species with particular potential to occur in the Proposed Action Site and Alternative Site B, and wetland-associated state threatened and endangered species that could potentially be affected by the use of the Proposed Action Site or Alternative Site B follow.

Grasshopper sparrow. The grasshopper sparrow, state-listed as a species of special concern, prefers grasslands with low to moderate grass heights. The Niagara Falls ARS has extensive grassland fields where grasshopper sparrows might nest. Surveys for the USFWS inventory observed grasshopper sparrows on several survey plots near the runway. The USFWS inventory report concluded that repeated sightings during the breeding season suggests breeding activity on the Niagara Falls ARS and that the grassland areas on the installation provides quality habitat for this species (Niagara Falls ARS 2001a).

Northern harrier. The northern harrier is state-listed as threatened and was observed regularly at Niagara Falls ARS foraging low over many of the fields. The northern harrier is an open country species that breeds in moderate to tall grasslands with dense vegetation and abundant residual vegetation (Niagara Falls ARS 2005). It is also associated with wetlands (e.g., fresh-and saltwater marshes, swamps and bogs, wet meadows), hay meadows, and cultivated and noncultivated farmland, and shrub-steppe habitats (Niagara Falls ARS 1999a). The northern harrier generally utilizes grassland dominated by thick vegetation and wetlands for nesting (Niagara Falls ARS 2005). Nests are difficult to locate as these raptors nest on elevated ground concealed by vegetation. It is unlikely that the northern harrier nested in areas that were considered semi-improved where mowing periodically occurs at the installation (Niagara Falls ARS 2009b). Nesting proximal to the installation has been confirmed by the NYSDEC Breeding Bird Atlas (NYSDEC 2007).

The northern harrier was identified on Niagara Falls ARS in November 1997 and in May 1998, both occurrences in open grassland near the runway. The 2001 USFWS inventory report concluded that the northern harrier utilizes the Niagara Falls ARS for foraging; however, no nesting on site was confirmed (Niagara Falls ARS 2001a). The installation’s habitat was described as consistent with northern harrier preferred habitat, including areas along the runways in the southern half of the installation. The Proposed Action Site and Alternative Site B were not included in the eligible habitat areas described by USFWS (Niagara Falls ARS 1999a).

**Table 3-10. Threatened and Endangered Species
Identified or Potentially Occurring on Niagara Falls ARS**

Common Name	Scientific Name	Status		Presence on Niagara Falls ARS
		Federal	State	
Mammals				
Allegheny woodrat	<i>Neotoma floridana</i>	NL	E	Historic range
Indiana bat	<i>Myotis sodalist</i>	E	E	Historic range
Eastern small-footed myotis	<i>Myotis leibii</i>	NL	SC	Historic range
Birds				
American bittern	<i>Botaurus lentiginosus</i>	NL	SC	Occurs
Peregrine falcon	<i>Falco peregrinus</i>	NL	E	Migrates through
Bald eagle ¹	<i>Haliaeetus leucocephalus</i>	D	T	Migrates through
Common nighthawk	<i>Chordelles minor</i>	NL	SC	Migrates through
Common tern	<i>Sterna hirundo</i>	NL	T	Migrates through
Grasshopper sparrow	<i>Ammodramus savannarum</i>	NL	SC	Occurs
Henslow’s sparrow	<i>Ammodramus henslowii</i>	NL	T	Historic range
Horned lark	<i>Eremophila alpestris</i>	NL	SC	Occurs
Least bittern	<i>Ixobrychus exilis</i>	NL	T	Occurs
Loggerhead shrike	<i>Lanius ludovicianus</i>	NL	E	Historic range
Northern harrier	<i>Circus cyaneus</i>	NL	T	Occurs
Osprey	<i>Pandion haliaetus</i>	NL	SC	Migrates through ³
Piping plover ²	<i>Charadrius melodus</i>	E	E	Migrates through
Red-shouldered hawk	<i>Buteo lineatus</i>	NL	SC	Migrates through
Short-eared owl	<i>Asio flammeus</i>	NL	E	Occurs
Upland sandpiper	<i>Bartramia longicauda</i>	NL	T	Occurs
Vesper sparrow	<i>Poocetes gramineus</i>	NL	SC	Historic range
Amphibians and Reptiles				
Eastern box turtle	<i>Terrapene Carolina</i>	NL	SC	Occurs ⁴
Northern cricket frog	<i>Acris crapitans</i>	NL	E	Historic range
Queen snake	<i>Regina septemvittata</i>	NL	E	Historic range
Invertebrates				
Devil crawfish	<i>Cambarus diogenes</i>	NL	UL	Occurs
Plants				
Eastern prairie fringed orchid	<i>Platanthera leucophea</i>	T	SH	Historic range

Sources: Niagara Falls ARS 2001a, Niagara Falls ARS 2009b, NYSDEC 2009b, USFWS 2009, USFWS NYFO 2009, NY Natural Heritage 2007, NY Natural Heritage 2008

Notes:

¹ The bald eagle was delisted on August 8, 2007. While there are no ESA requirements after this date, the eagles continue to receive protection under the Bald Eagle Protection Act.

² Piping plover is listed as federally endangered in the Great Lakes Region, and as federally threatened in the Atlantic Coastal Region.

³ Osprey was observed flying over the installation.

⁴ Eastern box turtle observation might have been misidentification.

E = Endangered

UL = Unlisted

SH = State Historical

T = Threatened

NL = Not Listed

D = Delisted

SC = Species of Special Concern

Short-eared owl. The short-eared owl is state-listed as endangered. The short-eared owl is most often found in inland or coastal marshes, meadows, old fields, pastures, and airports. Breeding habitats include moorlands, marshlands, bogs, and forested areas that have been cleared. The species prefers open habitat with substantial areas for suitable resting and nesting cover. Additional habitat requirements include nearby areas with high productivity of small mammals. Upland sites with vegetation (e.g., grasses, sedges, and forbs) less than 0.5 meters high is preferred for nesting. Mean territory size has been found to be approximately 136 acres (Niagara Falls ARS 1999b).

Six short-eared owls were observed on 12 March 1998 in the riparian shrub area of Cayuga Creek in the western portion of the installation, south of the runway, which includes a mixture of emergent wetland and dense shrub layer habitats. These were the only sightings of this species during this survey effort; however, additional unconfirmed sightings occurred in February 1999 on the north side of the runways (Niagara Falls ARS 1999b). It is suggested that the short-eared owl utilizes Niagara Falls ARS, as well as adjacent lands, for overwintering or migratory stopover habitat (Niagara Falls ARS 2001a). Habitat along the runways in the southern half of the installation, which includes upland successional field with several areas of emergent wetland, was described as consistent with short-eared owl preferred habitat. The Proposed Action Site and Alternative Site B were not included in the eligible habitat areas described by USFWS (Niagara Falls ARS 1999b).

Horned lark. The horned lark, state-listed as a species of special concern, prefers open areas and disturbed grasslands with short grass heights. They are specific to barren land such as plowed fields and overgrazed pastures and place their nests in shallow depressions scratched out of bare earth (Niagara Falls ARS 2001a). A few horned larks were heard early in the survey season (late May) in the grasslands at the far eastern end of the installation, north of Runway 28 and east of Taxiway A3. It was assumed that these birds were migrating through the area at the time of the survey and were using the fields to forage. However, these birds begin breeding in March and the young will fledge by May. It is possible that horned lark nested at the Niagara Falls ARS and that nests were overlooked due to the late start of the survey (Niagara Falls ARS 2009b). The 2001 USFWS inventory report concluded that limited sightings indicate infrequent, transient use by the species (Niagara Falls ARS 2001a).

Upland sandpiper. The upland sandpiper is state-listed as threatened. Upland sandpipers are grassland species that prefer low to moderate grass heights. An upland sandpiper was thought to be observed on 28 April 1998. Although this species could not be confirmed during this survey effort, several sightings of this species occurred during the 2000 breeding season while conducting other survey work. On one occurrence, observations were made of two adults that were displaying territorial behavior and one fledgling. No nest was found; however, repeated sightings during the breeding season suggest breeding activity on the Niagara Falls ARS (Niagara Falls ARS 2001a).

Vesper sparrow. The vesper sparrow, state-listed as a species of special concern, is found in various grassy open habitats, including prairie, sagebrush steppe, meadows, pastures, and roadsides (Cornell Lab of Ornithology 2009). Vesper sparrows have not been observed on Niagara Falls ARS; however, the installation is within its historic range (Niagara Falls ARS 1998b).

American bittern. The American bittern is a wetland species that is state-listed as a species of special concern. A single sighting was documented on 27 April 1999 in Cayuga Creek. This limited sighting indicates infrequent, transient use by this species (Niagara Falls ARS 2001a).

Least bittern. The least bittern, which is state-listed as threatened, was not found during USFWS surveys but has been identified on the installation in previous studies conducted by USFWS in 2001 and 2006. The least bittern nests exclusively in wetland habitats (Niagara Falls ARS 2009b).

Eastern box turtle. One unconfirmed sighting of an eastern box turtle, a state-listed species of special concern, was made on 28 May 1998 in Cayuga Creek at Niagara Falls ARS. This was a long-distance observation and the species might have been misidentified. Eastern box turtles are most common in moist forested areas, but also occur in wet meadows, pastures, and floodplains. The eastern box turtle has been extirpated from much of its previous range from Ohio to New England (Behler and King 1979).

Critical Habitat

There is no USFWS-designated critical habitat within Niagara Falls ARS.

3.7.3 Environmental Consequences

Evaluation Criteria

The significance of effects on biological resources is based on (1) the importance (i.e., legal, commercial, recreational, ecological, or scientific) of the resource, (2) the proportion of the resource that would be affected relative to its occurrence in the region, (3) the sensitivity of the resource to proposed activities, and (4) the duration of ecological effects. A habitat perspective is used to provide a framework for analysis of general classes of effects (e.g., noise, human disturbance).

Ground disturbance and noise associated with construction activities directly or indirectly cause potential impacts on biological resources. Direct impacts from ground disturbance were evaluated by identifying the types and locations of potential ground-disturbing activities in correlation to important biological resources. Habitat removal and damage or degradation of habitats could be effects associated with ground-disturbing activities.

Noise associated with a proposed action might be of sufficient magnitude to result in the direct loss of individuals and reduce reproductive output within certain ecological settings. Ultimately, extreme cases of such stresses could have the potential to lead to population declines or local or regional extinction. To evaluate effects, considerations were given to number of individuals or critical species involved, amount of habitat affected, relationship of the area of potential effect to total critical habitat within the region, type of stressors involved, and magnitude of the effects. Since no federally listed endangered, threatened, proposed, or candidate species are known to inhabit Niagara Falls ARS, and there is no critical habitat on the installation, no environmental analysis was conducted pursuant to Section 7 of the ESA.

Proposed Action – Site A

Vegetation. The Proposed Action would be expected to have direct, long-term, negligible adverse impacts on vegetation within Site A. Site A is primarily composed of nonnative grasses and various broad-leaved weeds and is mowed regularly. As there are few opportunities for historic native plant communities to occur on Niagara Falls ARS and there have been no observations made of any unique native vegetative species occurring on the installation, impacts on vegetation are expected to be negligible from the permanent loss of existing vegetation within Site A. Direct, long-term, negligible to minor beneficial impacts would be expected if areas that are disturbed from construction activities are replanted with native vegetation.

Wildlife. The Proposed Action would have direct, short-term, negligible to minor adverse impacts on wildlife due to effects of construction noise and heavy equipment use. Most wildlife species in the construction vicinity would be expected to quickly recover once the construction noise and disturbances have ceased. In addition, the construction area would be relatively small in size and is in a partially

developed area where disturbances are common. Wildlife on Niagara Falls ARS should also be habituated to noise disturbances due to aircraft overflights.

The Proposed Action would also have direct, long-term, negligible to minor adverse impacts on wildlife due to the permanent loss of habitat from the small arms range. NYSDEC has indicated that the installation's grassland habitat has regional importance for supporting a variety of grassland bird species, including numerous ground-nesting species such as the grasshopper sparrow and upland sandpiper (Niagara Falls ARS 1998b).

Several grassland-associated bird species (see **Table 3-9**), reptilian species (e.g., eastern garter snake, eastern box turtle), and mammalian species (e.g., woodchuck, eastern cottontail rabbit, red fox, meadow vole, white-tailed deer, deer mouse) could have potential to occur within or utilize Site A; however, most of Site A is regularly mowed and provides marginal habitat for most wildlife species. Certain species, including the eastern meadowlark, killdeer, Canada goose, American robin, and horned lark (state species of special concern), prefer to nest or feed in grasslands with low grass heights. This grassland habitat type is prevalent in other areas of the installation (e.g., along runways and adjacent areas to Site A); therefore, the loss of a relatively small area of this habitat would not be expected to have a significant effect on grassland populations.

The juxtaposition of Site A to the palustrine emergent wetland on its western side raises additional concern of impacting certain species that might use both habitat types (i.e., grassland and wetland), including the Canada goose, American tree sparrow, bank swallow, common yellowthroat, red-winged blackbird, tree swallow, northern harrier (state threatened), short-eared owl (state endangered), and eastern box turtle (state species of special concern). Additional grassland habitat similar to that of Site A would still be available on adjacent lands; therefore, impacts on these particular species, if utilizing these habitats, would be expected to be negligible to minor.

No impacts would be expected from noise associated with small arms firing within the range, as no noise from the small arms range will be heard from outside of the facility (see **Section 3.2.3**).

Threatened and Endangered Species. No federally or state-listed threatened or endangered species have been documented within Site A during previous surveys conducted by USFWS in 1998, 2001, 2007, and 2008; therefore, no adverse effects on federally listed species would be expected. However, Site A could potentially provide habitat for certain state-listed threatened or endangered species, including the northern harrier, short-eared owl, grasshopper sparrow, upland sandpiper, horned lark, vesper sparrow, and eastern box turtle. Additionally, USFWS has not been able to confirm the presence of the eastern prairie fringed orchid on the installation (Niagara Falls ARS 2009a). However, the eastern prairie fringed orchid was not found in sampling sites during May, August, and September 1998 USFWS vegetation surveys (Niagara Falls ARS 1998c). Therefore, no Federal or state listed or proposed threatened or endangered flora or fauna under NYSDEC and USFWS jurisdiction are known to occur within the vicinity of the Proposed Action (USFWS 2009) and no adverse effects on federally listed species would be expected.

The northern harrier and short-eared owl have been previously observed in grassland habitats along the runways on the installation. USFWS-LGLFRO management plans for both species state that Niagara Falls ARS prefers to keep these species off of the installation due to bird/wildlife aircraft strike hazard (BASH) concerns. USFWS-LGLFRO determined that because the northern harrier and short-eared owl have such large territories, deterrence of these species or removal and relocation of these species (e.g., one or two individuals) to off-installation habitats would not be expected to have a significant impact on the populations of these species (Niagara Falls ARS 1999a, Niagara Falls ARS 1999b).

Critical Habitat. There is no USFWS-designated critical habitat within Site A. Therefore, no impacts on critical habitat would be expected as a result of implementing the Proposed Action.

Alternative Site B

Vegetation. Selection of Alternative Site B would be expected to have direct, long-term, negligible adverse impacts on vegetation within Alternative Site B. Alternative Site B is primarily composed of nonnative grasses and various broad-leaved weeds and is mowed regularly. As there are few opportunities for historic native plant communities to occur on Niagara Falls ARS and there have been no observations made of any unique native vegetative species occurring on the installation, impacts on vegetation are expected to be negligible from the permanent loss of existing vegetation within Alternative Site B. Direct, long-term, negligible to minor beneficial impacts would be expected if areas that are disturbed from construction activities are replanted with native vegetation.

Wildlife. Direct, short-term, negligible adverse impacts would be expected as a result of construction activities in the area associated with Alternative Site B due to effects of construction noise and heavy equipment use. Most wildlife species in the construction vicinity would be expected to quickly recover once the construction noise and disturbances have ceased. In addition, the construction area would be relatively small in size and is in a partially developed area where disturbances are common. Wildlife on Niagara Falls ARS should also be habituated to noise disturbances due to aircraft overflights.

Selection of Alternative Site B would also be expected to have direct, long-term, negligible adverse impacts on wildlife due to the permanent loss of habitat from the small arms range. Several grassland-associated bird species (see **Table 3-9**), reptilian species (e.g., eastern garter snake, eastern box turtle), and mammalian species (e.g., woodchuck, eastern cottontail rabbit, red fox, meadow vole, white-tailed deer, deer mouse) could have potential to occur within or utilize Alternative Site B; however, most of Alternative Site B is regularly mowed and provides marginal habitat for most wildlife species. Certain species, including the eastern meadowlark, killdeer, Canada goose, American robin, and horned lark (state species of special concern), prefer to nest or feed in grasslands with low (e.g., mowed) grass heights. However, Alternative Site B is a relatively very small area of this habitat type and the surrounding habitat is mostly urbanized, providing minimal habitat diversity. Therefore, Alternative Site B would not be expected to attract many wildlife species or individuals and impacts would be negligible. Furthermore, this grassland habitat type is prevalent in other areas of the installation (e.g., along runways); therefore, the loss of a relatively small area of this habitat would not be expected to have a significant impact on grassland populations.

No impacts would be expected from noise associated with small arms firing within the range, as no noise from the small arms range will be heard from outside of the facility (see **Section 3.2.3**).

Threatened and Endangered Species. No federally or state-listed threatened or endangered species have been documented within Alternative Site B during previous surveys conducted by USFWS in 1998, 2001, 2007 and 2008; therefore, no adverse effects on federally listed species would be expected. However, Alternative Site B could potentially provide habitat for certain state-listed threatened or endangered species, including the northern harrier, short-eared owl, grasshopper sparrow, upland sandpiper, horned lark, vesper sparrow, and eastern box turtle. Additionally, USFWS has not been able to confirm the presence of the eastern prairie fringed orchid on the installation (Niagara Falls ARS 2009a). However, the eastern prairie fringed orchid was not found in sampling sites during May, August, and September 1998 USFWS vegetation surveys (Niagara Falls ARS 1998c). Therefore, no Federal or state listed or proposed threatened or endangered flora or fauna under NYSDEC and USFWS jurisdiction are known to occur within the vicinity of Alternative Site B (USFWS 2009) and no adverse effects on federally listed species would be expected.

The northern harrier and short-eared owl have been previously observed in grassland habitats along the runways on the installation. USFWS-LGLFRO management plans for both species state that Niagara Falls ARS prefers to keep these species off of the installation due to BASH concerns. USFWS-LGLFRO determined that because the northern harrier and short-eared owl have such large territories, deterrence of these species or removal and relocation of these species (e.g., one or two individuals) to off-installation habitats would not be expected to have a significant impact on the populations of these species (Niagara Falls ARS 1999a, Niagara Falls ARS 1999b).

Critical Habitat. There is no USFWS-designated critical habitat within Alternative Site B. Therefore, no impacts on critical habitat would be expected as a result of selecting Alternative Site B.

No Action Alternative

Under the No Action Alternative, existing conditions would remain as is and implementation of the Proposed Action Site or Alternative Site B would not occur. If the No Action Alternative were carried forward, there would be no associated change in or effects on biological resources at Niagara Falls ARS.

3.8 Hazardous Materials and Waste

3.8.1 Definition of the Resource

Hazardous material is defined by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA), and the Toxic Substances Control Act, as any substance with physical properties of ignitability, corrosivity, reactivity, or toxicity that might cause an increase in mortality, serious irreversible illness, incapacitating reversible illness, or pose a substantial threat to human health or the environment. Hazardous waste is defined by the Resource Conservation and Recovery Act (RCRA), which was further amended by the Hazardous and Solid Waste Amendments, as any solid, liquid, contained gaseous, or semisolid waste, or any combination of wastes that poses a substantial present or potential hazard to human health or the environment. In general, both hazardous materials and wastes include substances that, because of their quantity; concentration; or physical, chemical, or infectious characteristics, might present substantial danger to public health or welfare or the environment when released or otherwise improperly managed.

Evaluation of hazardous materials and wastes focuses on underground storage tanks (USTs) and aboveground storage tanks (ASTs) and the storage, transport, handling, and use of pesticides, fuels, and petroleum, oil, and lubricants (POLs). Evaluation might also extend to generation, storage, transportation, and disposal of hazardous wastes when such activity occurs at or near the project site of a proposed action. In addition to being a threat to humans, the improper release of hazardous materials and wastes can threaten the health and well being of wildlife species, botanical habitats, soil systems, and water resources. In the event of release of hazardous materials or wastes, the extent of contamination varies based on the type of soil, topography, and water resources.

Special hazards are those substances that might pose a risk to human health but are not regulated as contaminants under the hazardous wastes statutes. Potential hazards generally associated with demolition of older buildings include asbestos-containing materials (ACM) and lead-based paint (LBP). Information on special hazards describing their locations, quantities, and condition assists in determining their relevance to a proposed action.

To protect the environment and people from inadvertent and potentially harmful releases of hazardous substances, DOD has dictated that all facilities develop and implement Hazardous Material Emergency

Planning and Response Plans or Spill Prevention Control and Countermeasures (SPCC) Plans. Through its Environmental Restoration Program (ERP), DOD evaluates and cleans up sites where hazardous substances, pollutants, or contaminants have been spilled or released to the environment on active and former military installations. The ERP provides a uniform, thorough methodology to evaluate past disposal sites, to control the migration of contaminants, to minimize potential hazards to human health and the environment, and to clean up contamination.

3.8.2 Description of the Affected Environment

Hazardous Materials and Petroleum Products. AFI 32-7086, *Hazardous Materials Management*, establishes procedures and standards that govern management of hazardous materials throughout the USAF. It applies to all USAF personnel who authorize, procure, issue, use, or dispose of hazardous materials, and to those who manage, monitor, or track any of those activities. The 914 AW maintains a *Hazardous Materials Emergency Planning and Response Plan* (Niagara Falls ARS 2008e) that addresses storage and management of hazardous materials at Niagara Falls ARS. The 914 AW has established a hazardous materials pharmacy (HAZMART) in accordance with AFI 32-7086 (Niagara Falls ARS 2002). The HAZMART ensures that only the smallest quantities of hazardous materials necessary to accomplish the mission are purchased and used. Hazardous and toxic material procurements at the Niagara Falls ARS are approved and tracked by the 914 AW Commander. The Environmental Management Office at Niagara Falls ARS supports and monitors environmental permits, hazardous material storage, and spill prevention and response.

Hazardous materials are used at Niagara Falls ARS for cleaning, maintenance, and repair of aircraft, vehicles, and facilities. Examples include motor oil, gasoline, jet fuels, coolants, hydraulic fluids, paints, paint thinners, strippers, and degreasing agents. Hazardous materials are either stored in properly designated storerooms or the HAZMART in Building 207 (Niagara Falls ARS 1998a).

Hazardous and Petroleum Wastes. Hazardous waste generated at Niagara Falls ARS must be managed in accordance with USEPA, New York State, and USAF regulatory requirements. The 914 AW maintains a *Hazardous Waste Management Plan* (Niagara Falls ARS 2002) as directed by AFI 32-7042, *Solid and Hazardous Waste Compliance*. This plan prescribes the roles and responsibilities of all members of Niagara Falls ARS with respect to the waste stream inventory, waste analysis plan, hazardous waste management procedures, training, emergency response, and pollution prevention. The plan establishes the procedures to comply with applicable Federal, state, and local standards for solid waste and hazardous waste management.

Niagara Falls ARS is a large-quantity generator of hazardous waste, which is defined by RCRA as a facility that generates greater than 1,000 kilograms of hazardous waste per month. A large-quantity generator can accumulate hazardous wastes on site for up to 90 days without a permit. Processes generating hazardous wastes on Niagara Falls ARS include aircraft and vehicle maintenance, parts cleaning, support equipment maintenance, general facility maintenance, painting, nondestructive inspection, weapons training and cleaning, and expired shelf-life chemicals.

Hazardous wastes are generated and accumulated at satellite accumulation points (SAPs) and are then transported to the 90-Day Hazardous Waste Central Storage Area in Building 830, where they are kept for up to 90 days before they are transported off-installation for proper disposal. Typical types of wastes kept at this building include used batteries, T-56 compressor wash, antifreeze, paint, thinner, bead blast media, filters, and solvents (Niagara Falls ARS 2008e). SAPs have a 55-gallon maximum volume before wastes must be transferred to Building 830. Niagara Falls ARS uses the DOD-operated Defense Reutilization and Marketing Office (DRMO) in Portsmouth, New Hampshire, or DRMO Mechanicsburg, Pennsylvania for transfer of the majority of its hazardous waste to a permitted treatment, storage, or disposal facility.

The 90-Day Hazardous Waste Central Storage Area at Building 830 and the hazardous waste SAPs are all inspected weekly (Niagara Falls ARS 2008e).

Lead-Containing Ammunition. The small arms range design (i.e., a fully contained range design) must address environmental hazards resulting from the use of ammunition containing lead. Lead shot is not considered a hazardous waste subject to RCRA at the time it is discharged from a firearm because it is used for its intended purpose. As such, shooting lead shot (or bullets) is not regulated nor is a RCRA permit (i.e., hazardous waste “generator” permit) required to operate a shooting range. Provided that the lead is recycled or re-used, collected lead shot and bullets are excluded from RCRA regulation. However, spent lead shot or bullets, left in the environment, are subject to the broader definition of solid waste written by Congress and used in Sections 7002 and 7003 of the RCRA statute (USEPA 2005).

Ranges must be designed to control heavy metals and dust produced at both the muzzle, ejection port of the weapon, bullet trap, and from the ventilation exhaust to ensure compliance with Federal, state, and local regulations. Indoor ranges are not permitted to have floor drains downrange of the firing line. The supply and exhaust air system is critical to the safe operation of a fully contained indoor range and to the health of range inhabitants. The ventilation system must control exposure to lead and heavy metals in accordance with 29 CFR 1910.1025, *Lead*. Leadfree ammunition is now available and can be used to eliminate the lead contamination concern.

Reclaimed lead must be disposed of or recycled in accordance with Federal, state, and local regulations through the DRMO. Bullet traps are typically used on contained ranges and placed in front of the backstop or rear wall of the range. They are total systems that deflect, stop, trap, and contain direct-fired rounds, and can incorporate vacuum or other dust-management systems to capture projectile particles. Bullet traps installed at indoor ranges must have a dust-management system installed to provide heavy metal particle removal from the range environment. The trap must have the capability to be cleaned of accumulated deposits of bullets and fragments while minimizing lead exposure to the maintainer. Only trained personnel wearing proper personal protection are allowed to remove lead from the range (USAF 2008).

The small arms range design must also address environmental hazards resulting from the residue resulting from non-lead frangible ammunition. Ammunition residue can contain unburned propellant. Excess build-up of this residue has caused flammable hazards within ranges. This flammability hazard can be controlled using a combination of facility and operational procedures to eliminate the risk of fire. Range personnel must work with local agencies to determine the required frequencies and procedures for removing unburned propellant from the range (USAF 2008).

Lead-Based Paint. The Residential Lead-Based Paint Hazard Reduction Act of 1992, Subtitle B, Section 408 (commonly called Title X), passed by Congress on October 28, 1992, regulates the use and disposal of LBP at Federal facilities. Federal agencies are required to comply with applicable Federal, state, and local laws relating to LBP activities and hazards. USAF policy and guidance establishes LBP management at USAF facilities. The policy incorporates by reference the requirements of 29 CFR 1910.120, 29 CFR Part 1926, 40 CFR 50.12, 40 CFR Parts 240 through 280, the CAA, and other applicable Federal regulations. Additionally, the policy requires each installation to develop and implement a facility management plan for identifying, evaluating, managing, and abating LBP hazards. Niagara Falls ARS manages LBP in accordance with the *Lead-Based Paint Management Plan*, updated in 2001 (Niagara Falls ARS 2001c). There are no buildings within the Proposed Action Site or Alternative Site B; therefore, it is assumed that LBP is not present in either site.

Asbestos-Containing Materials. AFI 32-1052, *Facilities Asbestos Management*, provides the direction for asbestos management at USAF installations. AFI 32-1052 requires installations to develop an

Asbestos Management Plan for the purpose of maintaining a permanent record of the status and condition of ACM in installation facilities, as well as documenting asbestos management efforts. In addition, the instruction requires installations to develop an Asbestos Operating Plan detailing how the installation accomplishes asbestos-related projects. Asbestos is regulated by USEPA with the authority promulgated under the Occupational Safety and Health Act, 29 U.S.C. 669, et seq. Section 112 of the CAA regulates emissions of asbestos fibers to ambient air. USEPA policy is to leave asbestos in place if disturbance or removal could pose a health threat.

Niagara Falls ARS manages asbestos in accordance with the *Asbestos Management Program Plan* that was updated in 2001 (Niagara Falls ARS 2001b). This plan specifies procedures for the removal, encapsulation, enclosure, and repair activities associated with ACM-abatement projects. Additionally, it is designed to protect personnel who live and work on the installation from exposure to airborne asbestos fibers as well as to ensure the installation remains in compliance with Federal, state, and local regulations pertaining to asbestos. In 1993, the Air National Guard Readiness Center, Civil Engineering Technical Service Center's Asbestos Management Team surveyed 31 buildings for ACM. Tests of the collected material revealed the presence of ACM in some buildings (Niagara Falls ARS 2001b). Materials that could contain asbestos include pipe insulation and floor tiles. Asbestos materials are removed on an as-needed basis to minimize health risks from release of asbestos fibers during normal activities, maintenance, renovation, or demolition.

There are no buildings within the Proposed Action Site and Alternative Site B; therefore, it is assumed that ACM is not present within either site. However, ACM might be present in buried water or sewer lines within Alternative Site B.

Environmental Restoration Program. ERP is a subcomponent of the Defense Environmental Restoration Program that became law under SARA. ERP requires each DOD installation to identify, investigate, and clean up hazardous waste disposal or release sites. Niagara Falls ARS has 14 ERP sites (see **Table 3-11** and **Figure 3-3**). Of the 14 sites, no further action (NFA) decisions have been approved for four sites: ERP Sites 6, 11, 12, and 13. Of the remaining sites, long-term monitoring (LTM) of groundwater is underway at ERP Sites 1, 2, 4, 5, 7, 8, and 9. Remedial designs involving groundwater extraction and discharge have been developed for ERP Sites 3, 10, and 13. Any proposed alteration of an area designated as an ERP site needs a waiver from Headquarters AFRC. None of the sites are on the National Priorities List (Niagara Falls ARS 1998d).

There are no ERP sites within the Proposed Action Site or Alternative Site B. Five ERP sites are in the vicinity of the Proposed Action Site, including former ERP Site 1 (Building 600 JP-4 Pipeline Leak), approximately 800 feet south-southwest of the Proposed Action Site; former ERP Site 2 (POL Bulk JP-4 Tank C Leak), approximately 300 feet south of the Proposed Action Site; ERP Site 3 (Landfill), approximately 500 feet west-southwest of the Proposed Action Site; ERP Site 4 (Base Exchange Gas Station Motor Gasoline Tank Leak), approximately 800 feet southwest of the Proposed Action Site; and ERP Site 6 (POL Bulk JP-4 Tank A Leak), approximately 475 feet southeast of the Proposed Action Site. LTM of groundwater is in place for former ERP Sites 1 and 2 and ERP Site 4; corrective measures (CM) are currently being implemented for ERP Site 3; and ERP Site 6 has NFA planned. Groundwater in the Proposed Action Site generally flows west; therefore, contamination from ERP Site 3 (Landfill) would not be expected to flow into the Proposed Action Site. VOC contamination at Site 3 has historically been confined to the area along both sides of Cayuga Creek (Niagara Falls ARS 2008e), approximately 0.25 miles west-southwest of the Proposed Action Site.

Table 3-11. Environmental Restoration Program Sites on Niagara Falls ARS

ERP Site	Name	Contaminant	Status
1	Building 600 JP-4 Pipeline Leak	JP-4	LTM of groundwater
2	POL Bulk JP-4 Tank C Leak	JP-4	LTM of groundwater
3	Landfill	Construction rubble, coal ash, waste oil, shop wastes, batteries, electrical and car parts, and drums	CM being implemented
4	Base Exchange Gas Station Motor Gasoline Tank Leak	Gasoline	LTM of groundwater
5	NYANG Hazardous Waste Drum Storage Yard	Drummed hazardous waste including solvents, paints, and oils	LTM of groundwater
6	POL Bulk JP-4 Tank A Leak	JP-4	NFA
7	JP-4 Tank Truck Spill	JP-4	LTM of groundwater
8	Building 202 Drum Storage Yard	Drummed hazardous waste including solvents, paints, and oils	LTM of groundwater
9	Fire Training Area No. 3	Waste fuels, oils, solvents, and hydraulic fluid	CM being implemented
10	Fire Training Area No. 1	Waste fuels, oils, solvents, and hydraulic fluid	CM being implemented
11	Fire Training Area No. 2	Waste JP-4	NFA
12	Building 850 Drum Storage Yard	Drummed hazardous waste including solvents, paints, and battery acid oils	NFA
13	Underground Tank Pit	General ship waste including waste oils, solvents, and automotive fluids	CM being implemented
14	AFRC Hazardous Waste Drum Storage Yard	Drummed hazardous waste including solvents, paints, and battery acid oils	NFA, Site Closed

Source: Niagara Falls ARS 1998d

Notes:

CM = corrective measures

LTM = long-term monitoring

NFA = No Further Action

POL = Petroleum, Oil, and Lubricants

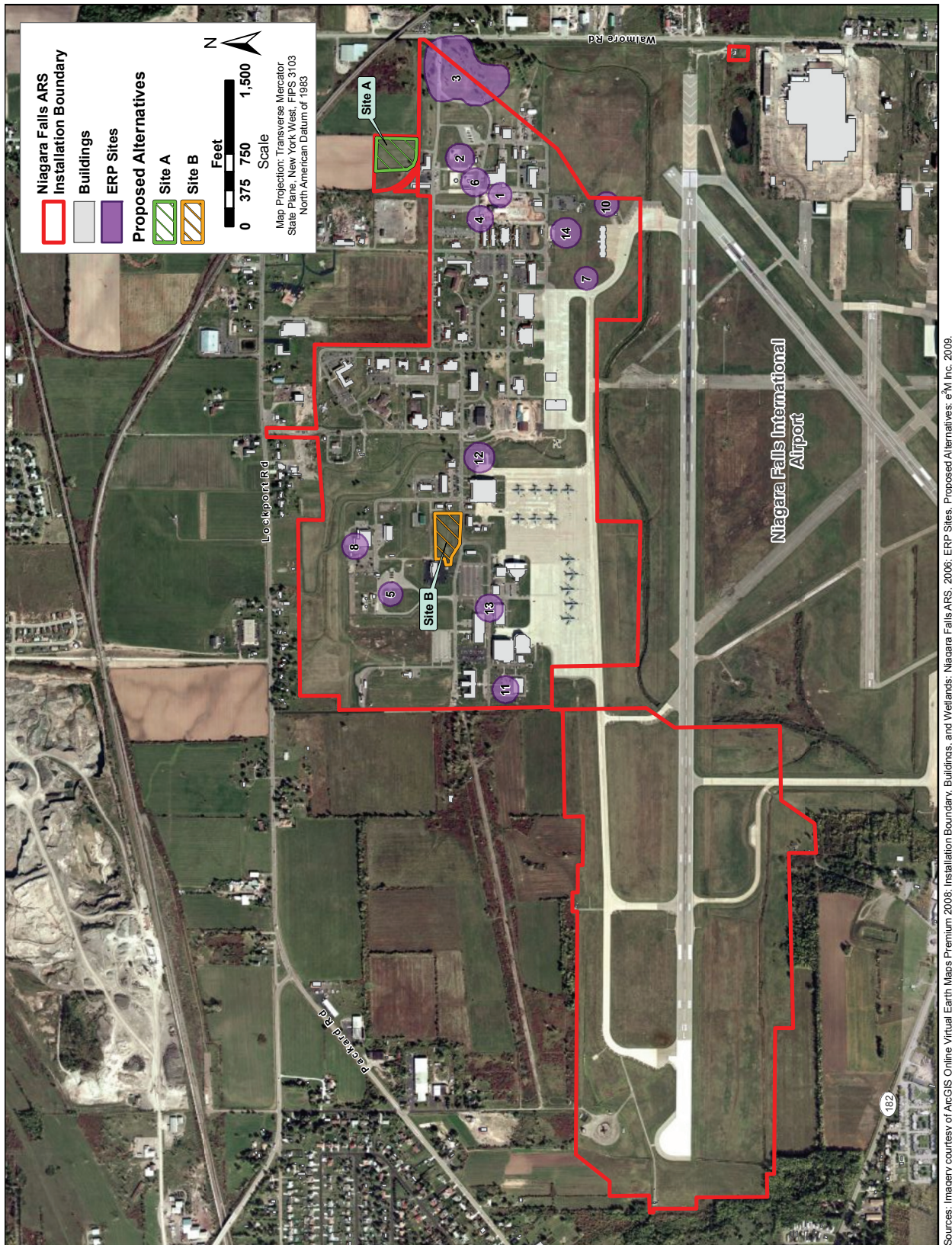


Figure 3-3. Environmental Restoration Program Sites at Niagara Falls ARS

Two active groundwater monitoring wells, MW1-1DA and MW1-7A, are within the Proposed Action Site. Monitoring wells MW1-1DA and MW1-7A are used as background wells for the ERP 6 NYCRR Part 373 Permit with the NYSDEC. Groundwater samples taken in November 2007 from MW1-1DA were positive for VOCs including acetone (1.5 micrograms per liter [$\mu\text{g/L}$]), cis-1,2-dichloroethene (2.7 $\mu\text{g/L}$), and vinyl chloride (0.62 $\mu\text{g/L}$); however, these levels do not exceed USEPA and New York State established screening values or guidance levels. MW1-1DA has previously had positive hits for trichloroethylene (approximately 1 $\mu\text{g/L}$ in 1995), total 1,2-dichloroethylene (ranged from 0 $\mu\text{g/L}$ to 3 $\mu\text{g/L}$ from 2004 to 2007), and vinyl chloride (ranged from 0 $\mu\text{g/L}$ to 1 $\mu\text{g/L}$ from 2004 to 2007). MW1-7A previously had samples contaminated with benzene, toluene, ethylbenzene, and xylene, which was up to 2 $\mu\text{g/L}$ in September 1989 and reached 0 $\mu\text{g/L}$ by 1992. Benzene, toluene, ethylbenzene, and xylene were detected again in 2003 at approximately 0.5 $\mu\text{g/L}$. Other VOCs were detected in samples at levels of up to 3 $\mu\text{g/L}$ from 1995 to 1996 (Niagara Falls ARS 2008e). Low-level periodic VOC detections in MW1-1DA and MW1-17A will be monitored to determine whether there is an off-site source or if variability in groundwater flow indicates an alternative on-site source.

Four ERP sites are in the vicinity of Alternative Site B, including ERP Site 5 (NYANG Hazardous Waste Drum Storage Yard), approximately 600 feet northwest of Alternative Site B; ERP Site 8 (Building 202 Drum Storage Yard), approximately 750 feet north of Alternative Site B; ERP Site 12 (Building 850 Drum Storage Yard), approximately 500 feet southeast of Alternative Site B; and ERP Site 13 (Underground Tank Pit), approximately 600 feet southwest of Alternative Site B. LTM of groundwater is in place for ERP Sites 5 and 8; ERP Site 12 has NFA planned; and CM are being implemented for ERP Site 13.

One groundwater monitoring well, MW5-7D, is on Alternative Site B. No contaminants have been detected above detection levels in groundwater samples from this well from 1998 to 2004.

3.8.3 Environmental Consequences

Evaluation Criteria

Impacts on hazardous materials and waste would be considered significant if the action resulted in noncompliance with applicable Federal, state, and USAF regulations, or increased the amounts of hazardous substances generated or procured beyond current Niagara Falls ARS waste management procedures and capacities. Impacts on the ERP would be considered significant if the action disturbed or created contaminated sites, resulting in adverse effects on human health or the environment.

Proposed Action – Site A

Hazardous Materials and Petroleum Products. Products containing hazardous materials would be procured and used during proposed construction activities of the Proposed Action. Construction equipment contains fuel, lubricating oils, hydraulic fluid, and coolants that could be regulated hazardous substances if they spilled or leaked on the construction site. During construction activities, vehicle and equipment operators would minimize the potential for a release of hazardous substances from all construction equipment. Prior to mobilization on the site, all vehicles and equipment would be inspected to ensure correct and leak-free operation. Appropriate spill containment material would be kept on-site. All fuels and other materials would be contained in the equipment or stored in appropriate containers. All materials would be removed upon completion of construction activities. It is anticipated that the quantity of products containing hazardous materials used during the demolition and construction activities would be minimal and that their use would be of short duration. Contractors would be responsible for the management of hazardous materials, which would be handled in accordance with Federal and state regulations. These would need to be identified to the HAZMART, and usage reported upon contract

completion. Therefore, no significant impacts from hazardous materials are expected from the Proposed Action.

Hazardous and Petroleum Wastes. It is anticipated that the quantity of hazardous waste generated from proposed construction activities would be negligible. The 914 AW would be responsible for the disposal of hazardous wastes in accordance with Federal and state laws and regulations. It is anticipated that hazardous waste would be generated from normal range operations and maintenance, but the increase to total base volume would be minimal. Therefore, the Proposed Action would not be expected to impact the installation's hazardous waste management program.

VOCs have previously been detected in groundwater samples taken from the groundwater monitoring wells (MW1-1DA and MW1-7A) within the Proposed Action Site; however, all samples taken in 2007 from MW1-1DA within Site A resulted in levels below established screening values and guidance levels. Therefore, no significant impacts would be expected from the Proposed Action.

Lead-Containing Ammunition. Since the small arms range will be fully contained, there is no risk of lead bullets, bullet particles, or dissolved lead entering the environment (e.g., soils, groundwater, surface water) via storm water runoff; and of accidental ingestion of particles or shot by wildlife. All collected lead waste from spent ammunition would be disposed of through the DRMO for recycling or proper disposal. This collection and disposal process is already in place at Niagara Falls ARS. Therefore, it is assumed that collection and disposal of additional lead waste from spent ammunition would not have any significant impact on Niagara Falls ARS's hazardous and solid waste disposal programs.

On ranges, inhalation is one pathway for lead exposure since shooters are exposed to lead dust during the firing of their guns. Workers could also be exposed to lead dust while performing routine maintenance operations, such as raking or cleaning out bullet traps. Only properly trained personnel would be permitted to remove bullet fragments from the bullet traps. Personnel would be required to wear the proper protective equipment when handling lead. The ventilation system within the small arms range would be designed to control exposure to lead and heavy metals in accordance with 29 CFR 1910.1025, *Lead*. Therefore, no impacts on health and safety would be expected from the use of lead-containing ammunition in the Proposed Action.

Asbestos Containing Materials. Specifications for proposed construction and USAF regulations prohibit the use of ACM for new construction. The Proposed Action Site is vacant and unimproved; therefore, no ACM wastes would be expected to be generated from demolition activities.

Lead-Based Paint. Specifications for proposed construction and USAF regulations prohibit the use of LBP for new construction. The Proposed Action Site is vacant and unimproved; therefore, no LBP wastes would be expected to be generated from demolition activities.

Environmental Restoration Program. There are no ERP sites within the Proposed Action Site; therefore, the Proposed Action would not be expected to have impacts on the ERP at Niagara Falls ARS. Excavation and digging activities at the Proposed Action Site would not extend south of the railroad tracks; therefore ERP Site 3 (Landfill) that is approximately 500 feet west-southwest of the Proposed Action Site would not be disturbed. Should contaminated groundwater from nearby ERP sites be encountered, the handling, storage, transportation, and disposal of hazardous substances would be conducted in accordance with applicable Federal, state, and local regulations; USAF regulations; and Niagara Falls ARS management procedures.

While there are no ERP sites within the Proposed Action Site (Site A), there are two active groundwater monitoring wells, MW1-1DA and MW1-7A. These wells could possibly be relocated with approval of

the NYSDEC, and an amendment to the existing 6 NYCRR Part 373 Permit. The wells have shown small hits of low-level contamination (see **Section 3.8.2**); however, no contaminant levels are above groundwater standards.

Alternative Site B

Hazardous Materials and Petroleum Products. Products containing hazardous materials would be procured and used during proposed construction activities as part of Alternative Site B. Construction equipment contains fuel, lubricating oils, hydraulic fluid, and coolants that could be regulated hazardous substances if they spilled or leaked on the construction site. During construction activities, vehicle and equipment operators would use BMPs to minimize the potential for a release of hazardous substances from all construction equipment. Prior to mobilization on the site, all vehicles and equipment would be inspected to ensure correct and leak free operation. Appropriate spill containment material would be kept on site. All fuels and other materials would be contained in the equipment or stored in appropriate containers. All materials would be removed upon completion of construction activities. It is anticipated that the quantity of products containing hazardous materials used during the demolition and construction activities would be minimal and that their use would be of short duration. Contractors would be responsible for the management of hazardous materials, which would be handled in accordance with Federal and state regulations. These would need to be identified to the HAZMART, and usage reported upon contract completion. Therefore, no significant impacts from hazardous materials are expected from the selection of Alternative Site B.

Hazardous and Petroleum Wastes. It is anticipated that the quantity of hazardous waste generated from proposed construction activities would be negligible. The 914th AW would be responsible for the disposal of hazardous wastes in accordance with Federal and state laws and regulations. It is anticipated that hazardous waste would be generated from normal range operations and maintenance, but the increase to total base volume would be minimal. Therefore, the selection of Alternative Site B would not be expected to impact the installation's hazardous waste management program.

Lead-Containing Ammunition. Since the small arms range would be fully contained, there is no risk of lead bullets, bullet particles, or dissolved lead entering the environment (e.g., soils, groundwater, surface water) via storm water runoff; and of accidental ingestion of particles or shot by wildlife. All collected lead waste from spent ammunition would be disposed of through the DRMO for recycling or proper disposal. This collection and disposal process is already in place at Niagara Falls ARS. Therefore, it is assumed that collection and disposal of additional lead waste from spent ammunition would not have any significant impact on Niagara Falls ARS's hazardous and solid waste disposal programs.

On ranges, inhalation is one pathway for lead exposure since shooters are exposed to lead dust during the firing of their guns. Workers could also be exposed to lead dust while performing routine maintenance operations, such as raking or cleaning out bullet traps. Only properly trained personnel would be permitted to remove bullet fragments from the bullet traps. Personnel would be required to wear the proper protective equipment when handling lead. The ventilation system within the small arms range would be designed to control exposure to lead and heavy metals in accordance with 29 CFR 1910.1025, *Lead*. Therefore, no impacts on health and safety would be expected from the use of lead-containing ammunition for Alternative Site B.

Asbestos-Containing Materials. Specifications for proposed construction and USAF regulations prohibit the use of ACM for new construction. Alternative Site B is vacant and unimproved; therefore, no ACM wastes would be expected to be generated from demolition activities. If existing utilities within Alternative Site B include ACM and are required to be disturbed or demolished, contractors would handle all ACMs according to Federal, state, and USAF regulations.

Lead-Based Paint. Specifications for proposed construction and USAF regulations prohibit the use of LBP for new construction. Alternative Site B is vacant and unimproved; therefore, no LBP wastes would be expected to be generated from demolition activities.

Environmental Restoration Program. There are no ERP sites within Site B; therefore, construction activities at Alternative Site B would not be expected to have impacts on the ERP at Niagara Falls ARS. VOCs have not been detected in groundwater within Alternative Site B. Should contaminated groundwater from nearby ERP sites be encountered, the handling, storage, transportation, and disposal of hazardous substances would be conducted in accordance with applicable Federal, state, and local regulations; USAF regulations; and Niagara Falls ARS management procedures.

While there are no ERP sites within Site B, there is an active groundwater monitoring well, MW5-7D. This well could possibly be relocated with approval of the NYSDEC, and an amendment to the existing 6 NYCRR Part 373 Permit. No contaminants have been detected above detection levels in groundwater samples from this well from 1998 to 2004 (see **Section 3.8.2**).

No Action Alternative

Under the No Action Alternative, existing conditions would remain as is and the Proposed Action (Site A) or Alternative Site B would not occur. If the No Action Alternative were selected, there would be no change in or effects on hazardous materials and waste at Niagara Falls ARS.

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4. Cumulative Impacts

4.1 Cumulative Effects

CEQ defines cumulative impacts as the “impacts on the environment that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions” (40 CFR 1508.7). Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time by various agencies (Federal, state, and local) or individuals. Informed decisionmaking is served by consideration of cumulative impacts resulting from projects that are proposed, under construction, recently completed, or anticipated to be implemented in the reasonably foreseeable future. Reasonably foreseeable future actions consist of activities that have been approved and can be evaluated with respect to their effects.

This section briefly summarizes past, current, and reasonably foreseeable future projects within the geographic and time scope of the Proposed Action and Alternative. The past, current, and reasonably foreseeable projects, identified below, make up the cumulative impacts scenario for the Proposed Action and Alternative. The cumulative impacts scenario is then compared to the Proposed Action and Alternative’s impacts on the individual resource areas analyzed in **Section 3** to determine the cumulative impacts of the Proposed Action and Alternative. In accordance with CEQ guidance, the current effects of past actions are considered in aggregate as appropriate for each resource area without delving into the historical details of individual past actions.

4.1.1 Past Development

In July 2008, as directed by the Defense Base Closure and Realignment Commission, the 914 AW completed exchange of its eight C-130H3 transport aircraft for 12 C-130H2 models (Niagara Falls ARS 2008a). In addition, the 107 ARW of NYANG became an associate unit of the 914 AW, sharing personnel, resources, and equipment. The eight KC-135R/T aircraft assigned to the 107 ARW were redeployed.

Also in July 2008, a new 25,000-square-foot fire rescue station opened, providing fire and rescue personnel with a modernized facility and state-of-the-art equipment to better serve the needs of the installation and local community (Niagara Falls ARS 2008f). The Niagara Falls ARS fire department serves the adjacent Niagara Falls IAP and provides support to local area fire stations.

4.1.2 Current Development

The MILCON project, Demolish and Construct Visiting Airmen Quarters Phase II, is under construction on Niagara Falls ARS. The new facility is scheduled for completion in 2009. A project to revitalize the water distribution system is also underway; it was initiated in March 2009 and should be completed by late summer 2009. The project includes installing 6 miles of new water lines on the AFRC side of the installation. The existing pipes will be abandoned in place. A third development project, the construction of an Armed Forces Reserve Center, is anticipated to be completed by summer 2010. This facility will be constructed in the northwest portion of Niagara Falls ARS near the Tuscarora Road gate. The project is under the direction of the USACE. This facility will consolidate the Army National Guard and U.S. Army Reserve personnel that are presently located across the airfield in the hangars on Porter Road. The approximate size of this facility will be 84,082 square feet.

The Niagara Frontier Transportation Authority has begun construction of a \$29.7 million improvement project at Niagara Falls IAP, featuring a new state-of-the-art 69,430-square-foot terminal designed to better accommodate modern passenger jets and improve passenger's security experience (Niagara Falls IAP undated). The new terminal is scheduled to open in July 2009 and will more than triple the size of the present terminal.

4.1.3 Reasonably Foreseeable Development

The number of new development activities within the Niagara Falls area is generally low, and no cumulative impacts related to land use, overall zoning, and land management objectives have been identified as a part of the Proposed Action.

4.1.4 Cumulative Effects by Resource Topic

Noise. Construction would generate minimal amounts of noise. The cumulative impacts of increased noise would not result in a significant cumulative impact.

Land Use. No significant development projects were identified in the vicinity of Niagara Falls ARS. Minor changes of land use from open space to administrative would occur under the Proposed Action and Alternative Site B, but this would not contribute to a significant cumulative impact.

Air Quality. Selection of the Proposed Action or Alternative Site B would result in low levels of air emissions below *de minimus* thresholds and would not combine with other development activities or stimulate further development that would significantly impact air quality.

Safety. Short-term, minor adverse effects on safety would be expected from construction activities. Construction contractors would be required to establish and maintain safety programs. Selection of the Proposed Action Site or Alternative Site B would have long-term, minor beneficial effects on the safety of personnel by allowing them to train on-installation instead of travelling off-installation for small arms training.

Water and Soil Resources. The Proposed Action and Alternative Site B would be located on previously undisturbed lands. However, there would be a negligible increase in impervious surface area within the watershed. Since a large proportion of the recharge areas in and around Niagara Falls ARS remain undeveloped, the cumulative effects of reduced surficial aquifer recharge would not be significant. No significant cumulative impacts related to hydrology or water quality have been identified.

Biological Resources. The Proposed Action and Alternative Site B would be located on previously undisturbed lands. However, this would not lead to significant habitat loss or fragmentation. Since threatened or endangered species are not known to inhabit Niagara Falls ARS, the cumulative effect would not be significant.

Hazardous Materials and Wastes. Products containing hazardous materials would be procured and used during proposed construction activities. Contractors would be responsible for the management of hazardous materials, which would be handled in accordance with Federal and state regulations. It is anticipated that the quantity of hazardous waste generated from proposed construction activities would be negligible and the increase in hazardous waste generation from operation and maintenance of the range would be minimal. The 914 AW would be responsible for the disposal of hazardous wastes in accordance with Federal and state laws and regulations. Therefore, no significant impacts from hazardous materials are expected.

Table 4-1 summarizes potential cumulative effects on resources from the selection of Proposed Action or Alternative Site B when combined with other past, present, and future activities.

Table 4-1. Cumulative Effects on Resources

Resource	Past Actions	Current Background Activities	Proposed Action	Future Actions	Cumulative Effects
Noise	Aircraft activities are dominant noise source.	Aircraft activities are dominant noise source.	Short-term noise from construction activities.	None.	Aircraft activities will be dominant noise source, effect not significant.
Land use	Past development practices (conversion of forest to agriculture) has extensively modified land use.	Military installation, commercial, residential, light industrial land uses.	No change in overall land use.	None.	None.
Air Quality	Marginal nonattainment area for O ₃ .	Emissions from aircraft, vehicles, buildings.	Emissions from construction would be below <i>de minimus</i> thresholds.	None.	Continued marginal nonattainment for O ₃ , effect not significant.
Safety	Construction activities and daily operations.	Small-scale construction activities and daily operations, including aircraft operations.	Short-term effects from construction activities.	None.	Negligible effects from day-to-day operations.
Water Resources	Surface water quality moderately impacted by development.	Stormwater discharge to Cayuga Creek within permitted limits.	Potential sedimentation from construction activities.	None.	None.

Resource	Past Actions	Current Background Activities	Proposed Action	Future Actions	Cumulative Effects
Biological Resources	Degraded historic habitat of sensitive and common wildlife species.	Installation operations impact wildlife habitat.	Disturbance of vegetation by construction. Displacement and potential to kill or injure small, nonsensitive mammals and rodents during construction.	None.	Permanent loss of vegetation and low-quality habitat, effect not significant.
Hazardous Materials and Waste	A total of 14 ERP sites on Niagara Falls ARS have been identified.	Construction and operation of airfield and facilities. Corrective measures at 2 ERP sites.	Small quantities of materials used and wastes generated during construction, operation and maintenance.	Long-term monitoring at ERP sites.	Construction and operation of airfield and facilities have minor effect on hazardous materials and waste.

4.2 Compatibility of the Proposed Action and Alternatives with the Objectives of Federal, Regional, State, and Local Land Use Plans, Policies, and Controls

Impacts on the ground surface as a result of selection of the Proposed Action Site or Alternative Site B would occur entirely within the boundaries of Niagara Falls ARS. The Proposed Action and Alternative Site B would be consistent with all off-installation land use ordinances or designated clear zones.

4.3 Relationship between Short-Term Uses of Man's Environment and the Maintenance and Enhancement of Long-Term Productivity

Short-term uses of the biophysical components of the human environment include direct construction-related disturbances and direct effects associated with an increase in population and activity that occurs over a period of less than 5 years. Long-term uses of the human environment include those effects occurring over a period of more than 5 years, including permanent resource loss.

Several kinds of activities could result in short-term resource uses that compromise long-term productivity. Filling of wetlands or loss of other especially important habitats and consumptive use of high-quality water at nonrenewable rates are examples of actions that affect long-term productivity.

4.4 Irreversible or Irretrievable Commitment of Resources

Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that use of these resources will have on future generations. Irreversible effects primarily result

from use or destruction of a specific resource that cannot be replaced within a reasonable timeframe (e.g., energy and minerals). The irreversible and irretrievable commitments of resources that would result from implementation of the Proposed Action involve the consumption of material resources used for construction, energy resources, land, and human labor resources. The use of these resources is considered to be permanent.

Material Resources. Material resources utilized for the Proposed Action include building materials (for construction of facilities), concrete and asphalt (for roads and parking areas), and various material supplies (for infrastructure). Most of the materials that would be consumed are not in short supply, would not limit other unrelated construction activities, and would not be considered significant.

Energy Resources. Energy resources used for the Proposed Action would be irretrievably lost. These include petroleum-based products (such as gasoline and diesel), natural gas, and electricity. During construction, gasoline and diesel would be used for the operation of construction vehicles. During operation, gasoline would be used by the additional traffic. Natural gas and electricity would be used by operational activities. Consumption of these energy resources would not place a significant demand on their availability in the region. Therefore, no significant effects would be expected.

Biological Habitat. The Proposed Action would result in a loss of vegetation and wildlife habitat. However, the loss would be minimal and not considered significant on a regional basis.

Human Resources. The use of human resources for construction and operation is considered an irretrievable loss only in that it would preclude such personnel from engaging in other work activities. However, the use of human resources for the Proposed Action represents employment opportunities and is considered beneficial.

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APPENDIX A

APPLICABLE LAWS, REGULATIONS, POLICIES, AND PLANNING CRITERIA

Appendix A

Applicable Laws, Regulations, Policies, and Planning Criteria

When considering the affected environment, the various physical, biological, economic, and social environmental factors must be considered. In addition to the National Environmental Policy Act (NEPA), there are other environmental laws as well as Executive Orders (EOs) to be considered when preparing environmental analyses. These laws are summarized below.

NOTE: This is not a complete list of all applicable laws, regulations, policies, and planning criteria potentially applicable to documents, however, it does provide a general summary for use as a reference.

Airspace

Airspace management in the U.S. Air Force (USAF) is guided by Air Force Instruction (AFI) 13-201, *Air Force Airspace Management*. This AFI provides guidance and procedures for developing and processing special use airspace (SUA). It covers aeronautical matters governing the efficient planning, acquisition, use, and management of airspace required to support USAF flight operations. It applies to activities that have operational or administrative responsibility for using airspace and establishes practices to decrease disturbances from flight operations that might cause adverse public reaction and provides flying unit commanders with general guidance for dealing with local problems.

Noise

The Air Installation Compatible Use Zone (AICUZ) Program, (AFI 32-7063), provides guidance to air bases and local communities in planning land uses compatible with airfield operations. The AICUZ program describes existing aircraft noise and flight safety zones on and near USAF installations.

Land Use

Land use planning in the USAF is guided by *Land Use Planning Bulletin, Base Comprehensive Planning* (HQ USAF/LEEVS, August 1, 1986). This document provides for the use of 12 basic land use types found on a USAF installation. In addition, land use guidelines established by the U.S. Department of Housing and Urban Development (HUD) and based on findings of the Federal Interagency Committee on Noise (FICON) are used to recommend acceptable levels of noise exposure for land use.

Air Quality

The Clean Air Act (CAA) of 1970, and Amendments of 1977 and 1990, recognizes that increases in air pollution result in danger to public health and welfare. To protect and enhance the quality of the Nation's air resources, the CAA authorizes the U.S. Environmental Protection Agency (USEPA) to set six National Ambient Air Quality Standards (NAAQSs) which regulate carbon monoxide, lead, nitrogen dioxide, ozone, sulfur dioxide, and particulate matter pollution emissions. The CAA seeks to reduce or eliminate the creation of pollutants at their source, and designates this responsibility to state and local governments. States are directed to utilize financial and technical assistance as well as leadership from the Federal government to develop implementation plans to achieve NAAQS. Geographic areas are officially designated by the USEPA as being in attainment or nonattainment to pollutants in relation to their compliance with NAAQS. Geographic regions established for air quality planning purposes are designated as Air Quality Control Regions (AQCR). Pollutant concentration levels are measured at

designated monitoring stations within the AQCR. An area with insufficient monitoring data is designated as unclassifiable. Section 309 of the CAA authorizes USEPA to review and comment on impact statements prepared by other agencies.

An agency should consider what effect an action might have on NAAQS due to short-term increases in air pollution during construction as well as long-term increases resulting from changes in traffic patterns. For actions in attainment areas, a Federal agency could also be subject to USEPA's Prevention of Significant Deterioration (PSD) regulations. These regulations apply to new major stationary sources and modifications to such sources. Although few agency facilities will actually emit pollutants, increases in pollution can result from a change in traffic patterns or volume. Section 118 of the CAA waives Federal immunity from complying with the CAA and states all Federal agencies will comply with all Federal- and state-approved requirements.

The General Conformity Rule requires that any Federal action meet the requirements of a SIP or Federal Implementation Plan. More specifically, CAA conformity is ensured when a Federal action does not cause a new violation of the NAAQS, contribute to an increase in the frequency or severity of violations of NAAQS, or delay the timely attainment of any NAAQS, interim progress milestones, or other milestones toward achieving compliance with the NAAQS.

The General Conformity Rule applies only to actions in nonattainment or maintenance areas and considers both direct and indirect emissions. The rule applies only to Federal actions that are considered "regionally significant" or where the total emissions from the action meet or exceed the *de minimis* thresholds presented in 40 Code of Federal Regulations (CFR) 93.153. An action is regionally significant when the total nonattainment pollutant emissions exceed 10 percent of the AQCR's total emissions inventory for that nonattainment pollutant. If a Federal action does not meet or exceed the *de minimis* thresholds and is not considered regionally significant, then a full Conformity Determination is not required.

Safety

AFI 91-202, *USAF Mishap Prevention Program*, implements Air Force Policy Directive (AFPD) 91-2, *Safety Programs*. It establishes mishap prevention program requirements (including the Bird/Wildlife Aircraft Strike Hazard [BASH] Program), assigns responsibilities for program elements, and contains program management information. This instruction applies to all USAF personnel.

AFI 91-301, *Air Force Occupational and Environmental Safety, Fire Protection, and Health (AFOSH) Program*, implements AFPD 91-3, *Occupational Safety and Health*, by outlining the AFOSH Program. The purpose of the AFOSH Program is to minimize loss of USAF resources and to protect USAF personnel from occupational deaths, injuries, or illnesses by managing risks. In conjunction with the USAF Mishap Prevention Program, these standards ensure all USAF workplaces meet Federal safety and health requirements. This instruction applies to all USAF activities.

Geological Resources

Recognizing that millions of acres per year of prime farmland are lost to development, Congress passed the Farmland Protection Policy Act to minimize the extent to which Federal programs contribute to the unnecessary and irreversible conversion of farmland (7 CFR Part 658). Prime farmland are soils that have a combination of soil and landscape properties that make them highly suitable for cropland, such as high inherent fertility, good water-holding capacity, deep or thick effective rooting zones, and are not subject to periodic flooding. Under the Farmland Protection Policy Act, agencies are encouraged to conserve prime or unique farmlands when alternatives are practicable. Some activities that are not subject

to the Farmland Protection Policy Act include Federal permitting and licensing, projects on land already in urban development or used for water storage, construction for national defense purposes, or construction of new minor secondary structures such as a garage or storage shed.

Water Resources

The Clean Water Act (CWA) of 1977 is an amendment to the Federal Water Pollution Control Act of 1972, is administered by USEPA, and sets the basic structure for regulating discharges of pollutants into U.S. waters. The CWA requires USEPA to establish water quality standards for specified contaminants in surface waters and forbids the discharge of pollutants from a point source into navigable waters without a National Pollutant Discharge Elimination System (NPDES) permit. NPDES permits are issued by USEPA or the appropriate state if it has assumed responsibility. Section 404 of the CWA establishes a Federal program to regulate the discharge of dredge and fill material into waters of the United States. Section 404 permits are issued by the U.S. Army Corps of Engineers (USACE). Waters of the United States include interstate and intrastate lakes, rivers, streams, and wetlands that are used for commerce, recreation, industry, sources of fish, and other purposes. The objective of the CWA is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. Each agency should consider the impact on water quality from actions such as the discharge of dredge or fill material into U.S. waters from construction, or the discharge of pollutants as a result of facility occupation.

Section 303(d) of the CWA requires states and USEPA to identify waters not meeting state water-quality standards and to develop TMDLs. A TMDL is the maximum amount of a pollutant that a waterbody can receive and still be in compliance with state water-quality standards. After determining TMDLs for impaired waters, states are required to identify all point and nonpoint sources of pollution in a watershed that are contributing to the impairment and to develop an implementation plan that will allocate reductions to each source to meet the state standards. The TMDL program is currently the Nation's most comprehensive attempt to restore and improve water quality. The TMDL program does not explicitly require the protection of riparian areas. However, implementation of the TMDL plans typically calls for restoration of riparian areas as one of the required management measures for achieving reductions in nonpoint source pollutant loadings.

The Coastal Zone Management Act (CZMA) of 1972 declares a national policy to preserve, protect, and develop, and, where possible, restore or enhance the resources of the Nation's coastal zone. The coastal zone refers to the coastal waters and the adjacent shorelines including islands, transitional and intertidal areas, salt marshes, wetlands, and beaches, and includes the Great Lakes. The CZMA encourages states to exercise their full authority over the coastal zone, through the development of land and water use programs in cooperation with Federal and local governments. States may apply for grants to help develop and implement management programs to achieve wise use of the land and water resources of the coastal zone. Development projects affecting land or water use or natural resources of a coastal zone, must ensure the project is, to the maximum extent practicable, consistent with the state's coastal zone management program.

The Safe Drinking Water Act (SDWA) of 1974 establishes a Federal program to monitor and increase the safety of all commercially and publicly supplied drinking water. Congress amended the SDWA in 1986, mandating dramatic changes in nationwide safeguards for drinking water and establishing new Federal enforcement responsibility on the part of USEPA. The 1986 amendments to the SDWA require USEPA to establish Maximum Contaminant Levels (MCLs), Maximum Contaminant Level Goals (MCLGs), and Best Available Technology (BAT) treatment techniques for organic, inorganic, radioactive, and microbial contaminants; and turbidity. MCLGs are maximum concentrations below which no negative human health effects are known to exist. The 1996 amendments set current Federal MCLs, MCLGs, and BATs for organic, inorganic, microbiological, and radiological contaminants in public drinking water supplies.

EO 11988, *Floodplain Management* (May 24, 1977), directs agencies to consider alternatives to avoid adverse effects and incompatible development in floodplains. An agency may locate a facility in a floodplain if the head of the agency finds there is no practicable alternative. If it is found there is no practicable alternative, the agency must minimize potential harm to the floodplain, and circulate a notice explaining why the action is to be located in the floodplain prior to taking action. Finally, new construction in a floodplain must apply accepted flood proofing and flood protection to include elevating structures above the base flood level rather than filling in land.

Biological Resources

The Endangered Species Act (ESA) of 1973 establishes a Federal program to conserve, protect, and restore threatened and endangered plants and animals and their habitats. The ESA specifically charges Federal agencies with the responsibility of using their authority to conserve threatened and endangered species. All Federal agencies must ensure any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of an endangered or threatened species or result in the destruction of Critical Habitat for these species, unless the agency has been granted an exemption. The Secretary of the Interior, using the best available scientific data, determines which species are officially endangered or threatened, and the U.S. Fish and Wildlife Service (USFWS) maintain the list. A list of Federal endangered species can be obtained from the Endangered Species Division, USFWS (703-358-2171). States might also have their own lists of threatened and endangered species which can be obtained by calling the appropriate State Fish and Wildlife office. Some species, such as the bald eagle, also have laws specifically for their protection (e.g., Bald Eagle Protection Act).

The Migratory Bird Treaty Act (MBTA) of 1918, as amended, implements treaties and conventions between the United States, Canada, Japan, Mexico, and the former Soviet Union for the protection of migratory birds. Unless otherwise permitted by regulations, the MBTA makes it unlawful to pursue, hunt, take, capture, or kill; attempt to take, capture or kill; possess, offer to or sell, barter, purchase, deliver, or cause to be shipped, exported, imported, transported, carried, or received any migratory bird, part, nest, egg, or product, manufactured or not. The MBTA also makes it unlawful to ship, transport or carry from one state, territory, or district to another, or through a foreign country, any bird, part, nest, or egg that was captured, killed, taken, shipped, transported, or carried contrary to the laws from where it was obtained; and import from Canada any bird, part, nest, or egg obtained contrary to the laws of the province from which it was obtained. The U.S. Department of the Interior has authority to arrest, with or without a warrant, a person violating the MBTA.

EO 11514, *Protection and Enhancement of Environmental Quality* (March 5, 1970), states that the President, with assistance from the Council on Environmental Quality (CEQ), will lead a national effort to provide leadership in protecting and enhancing the environment for the purpose of sustaining and enriching human life. Federal agencies are directed to meet national environmental goals through their policies, programs, and plans. Agencies should also continually monitor and evaluate their activities to protect and enhance the quality of the environment. Consistent with NEPA, agencies are directed to share information about existing or potential environmental problems with all interested parties, including the public, in order to obtain their views.

EO 11990, *Protection of Wetlands* (May 24, 1977), directs agencies to consider alternatives to avoid adverse effects and incompatible development in wetlands. Federal agencies are to avoid new construction in wetlands, unless the agency finds there is no practicable alternative to construction in the wetland, and the proposed construction incorporates all possible measures to limit harm to the wetland. Agencies should use economic and environmental data, agency mission statements, and any other pertinent information when deciding whether or not to build in wetlands. EO 11990 directs each agency to provide for early public review of plans for construction in wetlands.

EO 13186, *Conservation of Migratory Birds* (January 10, 2001), creates a more comprehensive strategy for the conservation of migratory birds by the Federal government. EO 13186 provides a specific framework for the Federal government's compliance with its treaty obligations to Canada, Mexico, Russia, and Japan. EO 13186 provides broad guidelines on conservation responsibilities and requires the development of more detailed guidance in a MOU. EO 13186 will be coordinated and implemented by the USFWS. The MOU will outline how Federal agencies will promote conservation of migratory birds. EO 13186 requires the support of various conservation planning efforts already in progress; incorporation of bird conservation considerations into agency planning, including NEPA analyses; and reporting annually on the level of take of migratory birds.

Cultural Resources

The National Historic Preservation Act (NHPA) of 1966 sets forth national policy to identify and preserve properties of state, local, and national significance. The NHPA establishes the Advisory Council on Historic Preservation (ACHP), State Historic Preservation Officers (SHPOs), and the National Register of Historic Places (NRHP). ACHP advises the President, Congress, and Federal agencies on historic preservation issues. Section 106 of the NHPA directs Federal agencies to take into account effects of their undertakings (actions and authorizations) on properties included in or eligible for the NRHP. Section 110 sets inventory, nomination, protection, and preservation responsibilities for federally owned cultural properties. Section 106 of the act is implemented by regulations of the ACHP, 36 CFR Part 800. Agencies should coordinate studies and documents prepared under Section 106 with NEPA where appropriate. However, NEPA and NHPA are separate statutes and compliance with one does not constitute compliance with the other. For example, actions which qualify for a categorical exclusion under NEPA might still require Section 106 review under NHPA. It is the responsibility of the agency official to identify properties in the area of potential effects, and whether they are included or eligible for inclusion in the NRHP. Section 110 of the NHPA requires Federal agencies to identify, evaluate, and nominate historic property under agency control to the NRHP.

The Archaeological Resource Protection Act (ARPA) of 1979 protects archaeological resources on public and American Indian lands. It provides felony-level penalties for the unauthorized excavation, removal, damage, alteration, or defacement of any archaeological resource, defined as material remains of past human life or activities which are at least 100 years old. Before archaeological resources are excavated or removed from public lands, the Federal land manager must issue a permit detailing the time, scope, location, and specific purpose of the proposed work. ARPA also fosters the exchange of information about archaeological resources between governmental agencies, the professional archaeological community, and private individuals. ARPA is implemented by regulations found in 43 CFR Part 7.

The Native American Graves Protection and Repatriation Act (NAGPRA) of 1990 establishes rights of American Indian tribes to claim ownership of certain "cultural items," defined as Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony, held or controlled by Federal agencies. Cultural items discovered on Federal or tribal lands are, in order of primacy, the property of lineal descendants, if these can be determined, and then the tribe owning the land where the items were discovered or the tribe with the closest cultural affiliation with the items. Discoveries of cultural items on Federal or tribal land must be reported to the appropriate American Indian tribe and the Federal agency with jurisdiction over the land. If the discovery is made as a result of a land use, activity in the area must stop and the items must be protected pending the outcome of consultation with the affiliated tribe.

EO 11593, *Protection and Enhancement of the Cultural Environment* (May 13, 1971), directs the Federal government to provide leadership in the preservation, restoration, and maintenance of the historic and cultural environment. Federal agencies are required to locate and evaluate all Federal sites under their jurisdiction or control which might qualify for listing on the NRHP. Agencies must allow the ACHP to

comment on the alteration, demolition, sale, or transfer of property which is likely to meet the criteria for listing as determined by the Secretary of the Interior in consultation with the SHPO. Agencies must also initiate procedures to maintain federally owned sites listed on the NRHP.

The American Indian Religious Freedom Act of 1978 and Amendments of 1994 recognize that freedom of religion for all people is an inherent right, and traditional American Indian religions are an indispensable and irreplaceable part of Indian life. It also recognized the lack of Federal policy on this issue and made it the policy of the United States to protect and preserve the inherent right of religious freedom for Native Americans. The 1994 Amendments provide clear legal protection for the religious use of peyote cactus as a religious sacrament. Federal agencies are responsible for evaluating their actions and policies to determine if changes should be made to protect and preserve the religious cultural rights and practices of Native Americans. These evaluations must be made in consultation with native traditional religious leaders.

EO 13007, *Indian Sacred Sites* (May 24, 1996), provides that agencies managing Federal lands, to the extent practicable, permitted by law, and not inconsistent with agency functions, shall accommodate American Indian religious practitioners' access to and ceremonial use of American Indian sacred sites, shall avoid adversely affecting the physical integrity of such sites, and shall maintain the confidentiality of such sites. Federal agencies are responsible for informing tribes of proposed actions that could restrict future access to or ceremonial use of, or adversely affect the physical integrity of, sacred sites.

EO 13287, *Preserve America* (March 3, 2003), orders Federal agencies to take a leadership role in protection, enhancement, and contemporary use of historic properties owned by the Federal government, and promote intergovernmental cooperation and partnerships for preservation and use of historic properties. EO 13287 established new accountability for agencies with respect to inventories and stewardship.

Socioeconomics and Environmental Justice

EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (February 11, 1994), directs Federal agencies to make achieving environmental justice part of their mission. Agencies must identify and address the adverse human health or environmental effects that its activities have on minority and low-income populations and develop agency wide environmental justice strategies. The strategy must list "programs, policies, planning and public participation processes, enforcement, and/or rulemakings related to human health or the environment that should be revised to promote enforcement of all health and environmental statutes in areas with minority populations and low-income populations, ensure greater public participation, improve research and data collection relating to the health of and environment of minority populations and low-income populations, and identify differential patterns of consumption of natural resources among minority populations and low-income populations." A copy of the strategy and progress reports must be provided to the Federal Working Group on Environmental Justice. Responsibility for compliance with EO 12898 is with each Federal agency.

Hazardous Materials and Waste

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 authorizes USEPA to respond to spills and other releases of hazardous substances to the environment, and authorizes the National Oil and Hazardous Substances Pollution Contingency Plan. CERCLA also provides a Federal "Superfund" to respond to emergencies immediately. Although the "Superfund" provides funds for cleanup of sites where potentially responsible parties cannot be identified, USEPA is

authorized to recover funds through damages collected from responsible parties. This funding process places the economic burden for cleanup on polluters.

The Pollution Prevention Act (PPA) of 1990 encourages manufacturers to avoid the generation of pollution by modifying equipment and processes, redesigning products, substituting raw materials, and making improvements in management techniques, training, and inventory control. Consistent with pollution prevention principles, EO 13423, *Strengthening Federal Environmental, Energy, and Transportation Management* (January 24, 2007 [revoking EO 13148]) sets a goal for all Federal agencies that promotes environmental practices, including acquisition of biobased, environmentally preferable, energy-efficient, water-efficient, and recycled-content products, and use of paper of at least 30 percent post-consumer fiber content. In addition, EO 13423 sets a goal that requires Federal agencies to ensure that they reduce the quantity of toxic and hazardous chemicals and materials acquired, used, or disposed of, increase diversion of solid waste as appropriate, and maintain cost effective waste prevention and recycling programs in their facilities. Additionally, in *Federal Register* Volume 58 Number 18 (January 29, 1993), CEQ provides guidance to Federal agencies on how to “incorporate pollution prevention principles, techniques, and mechanisms into their planning and decision making processes and to evaluate and report those efforts, as appropriate, in documents pursuant to NEPA.”

The Resource Conservation and Recovery Act (RCRA) of 1976 is an amendment to the Solid Waste Disposal Act. RCRA authorizes USEPA to provide for “cradle-to-grave” management of hazardous waste and sets a framework for the management of nonhazardous municipal solid waste. Under RCRA, hazardous waste is controlled from generation to disposal through tracking and permitting systems, and restrictions and controls on the placement of waste on or into the land. Under RCRA, a waste is defined as hazardous if it is ignitable, corrosive, reactive, toxic, or listed by USEPA as being hazardous. With the Hazardous and Solid Waste Amendments (HSWA) of 1984, Congress targeted stricter standards for waste disposal and encouraged pollution prevention by prohibiting the land disposal of particular wastes. The HSWA amendments strengthen control of both hazardous and nonhazardous waste and emphasize the prevention of pollution of groundwater.

The Superfund Amendments and Reauthorization Act (SARA) of 1986 mandates strong clean-up standards and authorizes USEPA to use a variety of incentives to encourage settlements. Title III of SARA authorizes the Emergency Planning and Community Right to Know Act, which requires facility operators with “hazardous substances” or “extremely hazardous substances” to prepare comprehensive emergency plans and to report accidental releases. If a Federal agency acquires a contaminated site, it can be held liable for cleanup as the property owner/operator. A Federal agency can also incur liability if it leases a property, as the courts have found lessees liable as “owners.” However, if the agency exercises due diligence by conducting a Phase I Environmental Site Assessment, it can claim the “innocent purchaser” defense under CERCLA. According to Title 42 United States Code (U.S.C.) 9601(35), the current owner/operator must show it undertook “all appropriate inquiry into the previous ownership and uses of the property consistent with good commercial or customary practice” before buying the property to use this defense.

The Toxic Substance Control Act (TSCA) of 1976 consists of four titles. Title I established requirements and authorities to identify and control toxic chemical hazards to human health and the environment. TSCA authorized USEPA to gather information on chemical risks, require companies to test chemicals for toxic effects, and regulate chemicals with unreasonable risk. TSCA also singled out polychlorinated biphenyls (PCBs) for regulation, and, as a result, PCBs are being phased out. PCBs are persistent when released into the environment and accumulate in the tissues of living organisms. They have been shown to cause adverse health effects on laboratory animals and could cause adverse health effects in humans. TSCA and its regulations govern the manufacture, processing, distribution, use, marking, storage, disposal, clean-up, and release reporting requirements for numerous chemicals like PCBs. TSCA Title II

provides statutory framework for “Asbestos Hazard Emergency Response,” which applies only to schools. TSCA Title III, “Indoor Radon Abatement,” states indoor air in buildings of the United States should be as free of radon as the outside ambient air. Federal agencies are required to conduct studies on the extent of radon contamination in buildings they own. TSCA Title IV, “Lead Exposure Reduction,” directs Federal agencies to “conduct a comprehensive program to promote safe, effective, and affordable monitoring, detection, and abatement of lead-based paint and other lead exposure hazards.” Further, any Federal agency having jurisdiction over a property or facility must comply with all Federal, state, interstate, and local requirements concerning lead-based paint.

APPENDIX B

INTERAGENCY AND INTERGOVERNMENTAL COORDINATION FOR ENVIRONMENTAL PLANNING (IICEP) MATERIALS

Appendix B

Interagency and Intergovernmental Coordination for Environmental Planning (IICEP) Materials



DEPARTMENT OF THE AIR FORCE AIR FORCE RESERVE COMMAND

20 May 2009

MEMORANDUM FOR SEE DISTRIBUTION

FROM: 914 MSG/CE
2405 Franklin Drive
Niagara Falls ARS NY 14304-5063

SUBJECT: Environmental Assessment for Review and Comment

1. The 914th Airlift Wing (914 AW) has prepared a Draft Environmental Assessment (EA) on the proposed *Construction and Operation of an Indoor Small Arms Range at Niagara Falls Air Reserve Station (ARS), New York*. The environmental impact analysis process for this proposal is being conducted by the 914 AW in accordance with Council on Environmental Quality regulations pursuant to the requirements of the National Environmental Policy Act of 1969. The Draft EA is included with this correspondence as an Attachment.
2. In accordance with Executive Order 12372, *Intergovernmental Review of Federal Programs*, we request your participation by reviewing the attached Draft EA and solicit your comments on the proposal and any potential environmental concerns that you may have. Please provide written comments or information regarding the action at your earliest convenience but no later than 30 days from the date of this letter. Appendix B of the Draft EA contains a listing of those Federal, state, and local agencies that have been contacted. If there are any additional agencies that you feel should review and comment on the proposed activities, please include them in your distribution of this letter and the attached materials.
3. Please address questions or comments on the proposal to our consultant, engineering-environmental Management, Inc. (e²M). The point-of-contact at e²M is Mr. Ron Lamb. He can be reached at (703) 752-7755, extension 106. Please forward your written comments to Mr. Lamb care of e²M, 2751 Prosperity Drive, Suite 200, Fairfax, VA 22031. Thank you for your assistance.


PAT BATTISTA
Base Civil Engineer

Atch: Draft EA for the Construction and Operation of Small Arms Range

DISTRIBUTION:
New York State Department of
Environmental Conservation
Buffalo Regional Headquarters
270 Michigan Avenue
Buffalo, NY 14203

U.S. Army Corps of Engineers
Buffalo District
1776 Niagara Street
Buffalo, NY 14207

Mr. Gregory Tessmann
District Conservationist
U.S. Department of Agriculture
Natural Resources Conservation Service
Lockport Service Center
4487 Lake Avenue
Lockport, NY 14094

Kevin P. O'Brien
P.E., Commissioner
Niagara County Dept. of Public Works
Brooks County Office Building
59 Park Avenue
Lockport, NY 14094

Mr. Daniel McEneny
New York State Office of Parks, Recreation,
and Historic Preservation
Historic Preservation Field Services Bureau
Peebles Island, PO Box 189
Waterford, NY 12188

Arthur F. Kroening
Superintendent
Town of Wheatfield Highway Department
6860 Ward Road
Niagara Falls, NY 14304

Mr. Kofi Fynn-Aikins
U.S. Fish and Wildlife Service
Lower Great Lakes Region
Fishery Resources Office
405 North French Road
Suite 120 A
Amherst, NY 14228

City of Niagara Falls
Office of Environmental Services
City Hall
745 Main Street
Niagara Falls, NY 14302

FEMA Region II
Office of Intergovernmental Affairs
26 Federal Plaza, Suite 1307
New York, NY 10278



DEPARTMENT OF THE AIR FORCE

AIR FORCE RESERVE COMMAND

May 20, 2009

Pat Battista
914 MSG/CE
2405 Franklin Drive
Niagara Falls ARS NY 14304-5063

Ms. Carol Ash
State Historic Preservation Office
Parks, Recreation & Historic Preservation
Agency Building #1, Empire State Plaza
Albany, NY 12238

Dear Ms. Ash

The 914th Airlift Wing (914 AW) has prepared a Draft Environmental Assessment (EA) on the proposed *Construction and Operation of an Indoor Small Arms Range at Niagara Falls Air Reserve Station (ARS), New York*. The environmental impact analysis process for this proposal is being conducted by the 914 AW in accordance with Council on Environmental Quality regulations pursuant to the requirements of the National Environmental Policy Act of 1969. The Draft EA is included with this correspondence as Attachment 1.

Attachment 2 shows a letter from the New York SHPO dated May 12, 2000 (SHPO PR number 95PR2445) concluding that there are no archaeological sites at Niagara Falls ARS. The SHPO also stated in this May 12, 2000 that future projects at Niagara Falls ARS will not require any further archaeological investigations. As shown in Section 3.1.2 of the attached EA, since the New York SHPO has indicated that there are no significant archaeological sites on Niagara Falls ARS, and because the Proposed Action Site and Alternative Site B do not involve any historic properties, a determination of no effect on cultural resources is provided in the attached EA.

In accordance with Executive Order 12372, *Intergovernmental Review of Federal Programs*, we request your participation by reviewing the attached Draft EA and solicit your comments on the proposal and any potential environmental concerns you may have. Please provide written comments or information regarding the action at your earliest convenience but no later than 30 days from the date of this letter. Appendix B of the Draft EA contains a listing of those Federal, state, and local agencies that have been contacted. If there are any additional agencies that you feel should review and comment on the proposed activities, please include them in your distribution of this letter and the attached materials.

Please address questions or comments on the proposal to our consultant, engineering-environmental Management, Inc. (e²M). The point-of-contact at e²M is Mr. Ron Lamb. He can be reached at (703) 752-7755, extension 106. Please forward your written comments to Mr. Lamb care of e²M, 2751 Prosperity Drive, Suite 200, Fairfax, VA 22031. Thank you for your assistance.

We welcome your input and request your confirmation of this determination. Thank you in advance for your cooperation in this matter. Please provide any comments to me at the address

listed above or fax your response to my attention at (716) 236-2598. If you have any questions or need additional information, please contact Mr. James Mathews of the 914 MSG/CEV at (716) 236-3122.

Sincerely



PAT BATTISTA
Base Civil Engineer

Attachments:

1. Draft EA for the Construction and Operation of an Indoor Small Arm Range
2. NYSHPO letter to 914 SPTG/CE dated May 12, 2000



New York State Office of Parks, Recreation and Historic Preservation
Historic Preservation Field Services Bureau
Peebles Island, PO Box 189, Waterford, New York 12188-0189

518-237-8643

May 12, 2000

Dermott F. Smyth
Base Civil Engineer
Department of the Air Force
914 SPTG/CE
2405 Franklin Drive
Niagara Falls ARS, New York 14304-5063

Dear Mr. Smyth:

Re: AIR FORCE
Base Master Plan/Niagara Falls International
Airport Air Reserve Station
Wheatfield, Niagara County
95PR2445

Thank you for requesting the comments of the State Historic Preservation Office (SHPO). We have reviewed the Stage 1 Cultural Resource Investigation reports for the Niagara Falls Air Reserve Station (NFARS) in accordance with Section 106 of the National Historic Preservation Act of 1966 and the relevant implementing regulations.

Based upon this review, the SHPO accepts and approves the reports. We concur with the conclusions of the reports that there are no archeological sites at NFARS. Therefore, the SHPO has no concerns that need to be addressed. In addition, future projects at NFARS will not require any additional archeological investigations.

When responding please be sure to refer to the SHPO project review (PR) number noted above. If you have any questions, please feel free to call me at (518) 237-8643 ext. 3255.

Sincerely,

Robert D. Kuhn
Assistant Director

RDK:bsd

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APPENDIX C

PUBLIC INVOLVEMENT

Appendix C

Public Involvement

PUBLIC NOTICE

Notice of Availability

Draft Environmental Assessment for the Construction and Operation of an Indoor Small Arms Range at Niagara Falls Air Reserve Station, New York

Niagara Falls Air Reserve Station, New York – An Environmental Assessment (EA) for the construction and operation of an indoor small arms range at Niagara Falls Air Reserve Station is being prepared. The 914th Airlift Wing (914 AW) is proposing to construct a 28-firing-point live-fire indoor small arms range that meets all necessary mandatory weapons training requirements for military personnel.

The 914 AW is proposing to issue a Finding of No Significant Impact (FONSI) based on the EA. The analysis considered in detail the potential effects of the Proposed Action, one viable alternative to the Proposed Action, and the No Action Alternative on the following resource areas: noise, land use, air quality, biological resources, safety, water and soil resources, and hazardous materials and waste. The results of the EA indicate that the Proposed Action and alternatives would not have a significant impact on the environment, indicating that a FONSI would be appropriate. An Environmental Impact Statement is not considered necessary to implement the Proposed Action or the alternatives.

Copies of the Draft EA describing the Proposed Action and alternatives in detail and presenting the analysis, as well as the Draft FONSI, are available for review at the Niagara Falls Public Library, Earl W. Brydges Building, 1425 Main Street, Niagara Falls, NY 14305. Public comments on the Draft EA will be accepted until June 19, 2009.

To request a copy of the FONSI and EA on CD, please contact the 914 AW Public Affairs Office at (716) 236-2000. Written comments and inquiries on the Draft EA and Draft FONSI should be directed to the 914 AW Office of Public Affairs, 2720 Kirkbridge Drive, Niagara Falls ARS, NY, 14304-5001 or call (716) 236-2000.

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19 May 2009

Niagara Falls Public Library
Earl W. Brydges Building
1425 Main Street
Niagara Falls, NY 14305

Dear Sir or Madam:

The public notice shown below was published in the *Niagara Gazette* on May 20, 2009. Please place the enclosed copy of the *Draft Environmental Assessment for the Construction and Operation of an Indoor Small Arms Range at Niagara Falls Air Reserve Station, New York* either on reserve or in the reference section of your library. Members of the public have been invited to review the document at your library until June 19, 2009. The document should not leave the library.

The public may request a copy of the FONSI and EA on CD by contacting the 914 AW Public Affairs Office at (716) 236-2000. Written comments and inquiries on the Draft EA and Draft FONSI should be directed to the 914 AW Office of Public Affairs, 2720 Kirkbridge Drive, Niagara Falls ARS, NY, 14304-5001 or call (716) 236-2000.

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If you have any questions, please contact me at (703) 752-7755, extension 106.

Sincerely,

engineering-environmental Management, Inc.

Ronald E. Lamb
Project Manager

engineering-environmental Management, Inc.

2751 Prosperity Avenue, Suite 200 • Fairfax, VA 22031 • (703) 752-7755 • Fax (703) 752-7754

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**New York State Office of Parks,
Recreation and Historic Preservation**

Historic Preservation Field Services Bureau • Peebles Island, PO Box 189, Waterford, New York 12188-0189
518-237-8643
www.nysparks.com

David A. Paterson
Governor

Carol Ash
Commissioner

May 28, 2009

Pat Battista
Department of the Air Force
2405 Franklin Drive
Niagara Falls, New York 14304

Re: AIR FORCE
Indoor Small Arms Range
Niagara Falls ARS
NIAGARA FALLS, Niagara County
09PR02782

Dear Mr. Battista:

Thank you for requesting the comments of the State Historic Preservation Office (SHPO). We have reviewed the project in accordance with Section 106 of the National Historic Preservation Act of 1966. These comments are those of the SHPO and relate only to Historic/Cultural resources. They do not include potential environmental impacts to New York State Parkland that may be involved in or near your project. Such impacts must be considered as part of the environmental review of the project pursuant to the National Environmental Policy Act and/or the State Environmental Quality Review Act (New York Environmental Conservation Law Article 8).

Based upon this review, it is the SHPO's opinion that your project will have No Effect upon cultural resources in or eligible for inclusion in the National Registers of Historic Places.

If further correspondence is required regarding this project, please be sure to refer to the OPRHP Project Review (PR) number noted above.

Sincerely,

Ruth L. Pierpont
Director

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STATE OF NEW YORK

NIAGARA COUNTY, } SS, _____

Linda Elliott, of said county, being duly sworn, deposes and says that she is now and during the whole time hereinafter mentioned was the Legal Clerk of

The Niagara Gazette

A newspaper published in the County and State aforesaid, and that the annexed printed legal # 251204 was printed and published in said paper at least once a week for one successive weeks, commencing on the 20th day of May and ending on the 20th day of May, 2009.

Linda S. Elliott
Principal Clerk

Subscribed and sworn to me before this 3 day of June, 2009

Leann S. Belfield
Notary Public

5/18/10
Expiration Date

Leann S. Belfield
Notary Public, State of New York
Qualified in Niagara County
My Commission Expires 5/18/10

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Elaine H. Dubin

From: Elaine H. Dubin
Sent: Friday, June 26, 2009 4:54 PM
To: Sandra_Doran@fws.gov
Cc: Audrey R. Wessel; Bruce H. Ramo; Elaine H. Dubin
Subject: Small Arms Range EA Bio and Wetland information
Attachments: NFARS Small Arms Range EA Wetland and Bio Sections.pdf

Sandie,

As requested, below is information from the EA regarding the no effect determination on Threatened and Endangered species, and information about the wetland west of the Proposed Action. Attached is the Water and Biological Resources sections of the EA for your use. The U.S. Army Corps of Engineers Buffalo District would be the responsible district related to this project. If you have any further questions regarding Threatened and Endangered Species- or Wetland-related issues in this EA, please contact Audrey Wessel, audrey.wessel@e2m.net or (703) 752-7755 x. 135. If you could please let me know on Monday 6/29 when comments could be expected so we can move forward with preparation of the EA, that would be great. Thank you.

Threatened and Endangered Species Determination:

In 1997, 2001, and 2007, the USFWS, Lower Great Lakes Fishery Resources Office (LGLFRO) conducted surveys for federally and state-listed endangered, threatened, and special concern species, and inventories of the natural communities and habitats on Niagara Falls ARS. Additional surveys were also conducted by USFWS-LGLFRO in 2001 and 2006. No federally threatened or endangered species have been observed on Niagara Falls ARS.

Based on previous USFWS surveys and existing habitat conditions on the site (undeveloped, regularly mowed grassland), impacts on federally threatened or endangered species or species of special concern are unlikely to occur from the implementation of the Proposed Action. The determination made from this Environmental Assessment is "no effect" on federally listed species.

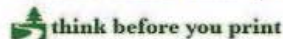
Wetlands:

A jurisdictional determination for "Wetland W," which is directly adjacent to the proposed site, was issued in 2004. This Jurisdictional Determination is currently being updated. The Proposed Action is designed to avoid the wetland based on its current delineated boundary. If this boundary changes based on the ongoing wetland delineation, the Proposed Action would be adjusted to avoid impacts on this wetland. However, the proposed site is large enough to avoid direct impacts from the proposed building footprint on the adjacent wetland, even if the delineated boundary changes.

Regards,

Elaine Dubin
Environmental Specialist
HDR | e2M
2751 Prosperity Avenue | Suite 200 | Fairfax, VA 22031
Phone: 703.752.7755, ext. 123 | Fax: 703.752.7754
Email: elaine.dubin@e2m.net
www.e2m-inc.com and www.hdrinc.com

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United States Department of the Interior

FISH AND WILDLIFE SERVICE

New York Field Office

3817 Luker Road

Cortland, NY 13045

Phone: (607) 753-9334 Fax: (607) 753-9699

<http://www.fws.gov/northeast/nyfo>



Project Number: 90452

To: Elaine Dubin, of HDR e2M

Date: July 7, 2009

Regarding: Niagara Falls Air Force Base - Small Arms Range EA

Town/County: Niagara Falls, NY

We have received your request for information regarding occurrences of Federally-listed threatened and endangered species within the vicinity of the above-referenced project/property. Due to increasing workload and reduction of staff, we are no longer able to reply to endangered species list requests in a timely manner. In an effort to streamline project reviews, we are shifting the majority of species list requests to our website at <http://www.fws.gov/northeast/nyfo/es/section7.htm>. Please go to our website and print the appropriate portions of our county list of endangered, threatened, proposed, and candidate species, and the official list request response. Step-by-step instructions are found on our website.

As a reminder, Section 9 of the Endangered Species Act (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) prohibits unauthorized taking* of listed species and applies to Federal and non-Federal activities. Additionally, endangered species and their habitats are protected by Section 7(a)(2) of the ESA, which requires Federal agencies, in consultation with the U.S. Fish and Wildlife Service (Service), to ensure that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat. An assessment of the potential direct, indirect, and cumulative impacts is required for all Federal actions that may affect listed species. For projects not authorized, funded, or carried out by a Federal agency, consultation with the Service pursuant to Section 7(a)(2) of the ESA is not required. However, no person is authorized to "take" any listed species without appropriate authorizations from the Service. Therefore, we provide technical assistance to individuals and agencies to assist with project planning to avoid the potential for "take," or which appropriate, to provide assistance with their application for an incidental take permit pursuant to Section 10(a)(1)(B) of the ESA.

Project construction or implementation should not commence until all requirements of the ESA have been fulfilled. If you have any questions or require further assistance regarding threatened or endangered species, please contact the Endangered Species Program at (607) 753-9334. Please refer to the above document control number in any future correspondence.

Endangered Species Biologist: Sandra Doran *Sandra Doran*

*Under the Act and regulations, it is illegal for any person subject to the jurisdiction of the United States to take (includes harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt any of these), import or export, ship in interstate or foreign commerce in the course of commercial activity, or sell or offer for sale in interstate or foreign commerce any endangered fish or wildlife species and most threatened fish and wildlife species. It is also illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken illegally. "Harm" includes any act which actually kills or injures fish or wildlife, and case law has clarified that such acts may include significant habitat modification or degradation that significantly impairs essential behavioral patterns of fish or wildlife.

Elaine H. Dubin

From: Sandra_Doran@fws.gov
Sent: Tuesday, July 07, 2009 5:08 PM
To: Elaine H. Dubin
Cc: Robyn Niver@fws.gov; Sandra_Doran@fws.gov
Subject: Re: Project number 90452: EA for Small Arms Range at Niagara Falls ARS

I will review your final ESA determination, then decide if any further comments are required.

Sandra Doran, Fish & Wildlife Biologist
Endangered Species/Federal Activities Branch
U.S. Fish & Wildlife Service
New York Field Office (Region 5)
3817 Luker Rd.
Cortland, NY 13045
(607) 753-9334 (voice)
(607) 753-9699 (fax)
<http://nyfo.fws.gov> (web)
sandra_doran@fws.gov (email)

"Elaine H. Dubin" <Elaine.Dubin@e2m.net>

07/07/2009 03:27 PM

To: <Sandra_Doran@fws.gov>

cc: "Audrey R. Wessel" <Audrey.Wessel@e2m.net>, "Bruce H. Ramo" <Bruce.Ramo@e2m.net>

Subject: Project number 90452: EA for Small Arms Range at Niagara Falls ARS

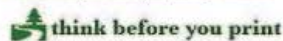
Sandie,

I received your fax, thank you. Could you please confirm that adding information from your website and the LGLFRO February 2009 report to the EA conclude any comments and concerns you have? Ms. Audrey Wessel (audrey.wessel@e2m.net, (703) 752-7755 x. 135) is the e²M Biological Resources staff member assigned to this project, she will contact you if she needs further information regarding your concerns. Thank you.

Regards,

Elaine Dubin
Environmental Specialist
HDR | e²M
2751 Prosperity Avenue | Suite 200 | Fairfax, VA 22031
Phone: 703.752.7755, ext. 123 | Fax: 703.752.7754
Email: elaine.dubin@e2m.net
www.e2m-inc.com and www.hdrinc.com

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Elaine H. Dubin

From: Elaine H. Dubin
Sent: Monday, July 13, 2009 11:57 AM
To: 'Sandra_Doran@fws.gov'
Cc: Bruce H. Ramo; Audrey R. Wessel; 'James.Mathews@niagarafalls.af.mil'
Subject: #90452: Final ESA determination for Niagara Falls ARS Small Arms Range EA

Ms. Doran,

As requested, below is the Final ESA determination for Project Number 90452: Draft *Environmental Assessment for the Construction and Operation of an Indoor Small Arms Range at Niagara Falls Air Reserve Station, New York*, which includes your comments and concerns from earlier this month. Please confirm that this determination concludes any comments or concerns you have on the EA. Please don't hesitate to contact me or Ms. Audrey Wessel (audrey.wessel@e2m.net, 703-752-7755 x. 135) if you have any questions. Thank you.

Final Threatened and Endangered Species Determination:

In 1997, 2001, 2006, 2007, and 2008 the USFWS, Lower Great Lakes Fishery Resources Office (LGLFRO) conducted surveys for federally and state-listed endangered, threatened and special concern species, and inventories of the natural communities and habitats on Niagara Falls ARS. The USFWS 2009 *Threatened and Endangered Species Report for Niagara Falls ARS* included additional surveys to the 2007 report for reptiles and amphibians in September 2008. These surveys revealed no reptiles or amphibians in two survey locations in Cayuga Creek. There is no mention of bald eagle or eastern prairie fringed orchid occurring on Niagara Falls ARS in the USFWS Threatened and Endangered species inventories. Therefore, no federally threatened or endangered species have been observed on Niagara Falls ARS.

Based on the previous USFWS surveys discussed above, the USFWS New York Field Office's Section 7 website (<http://www.fws.gov/northeastnyfo/es/section7.htm>), the NY Natural Heritage Program's Rare Animal and Plant lists, and existing habitat conditions on the site (undeveloped regularly mowed grassland), impacts on federally threatened or endangered species or species of special concern are unlikely to occur from the implementation of the Proposed Action. The determination made from this Environmental Assessment is "no effect" on federally listed species.

Regards,

Elaine Dubin

Environmental Specialist

HDR | e2M

2751 Prosperity Avenue | Suite 200 | Fairfax, VA 22031

Phone: 703.752.7755, ext. 123 | Fax: 703.752.7754

Email: elaine.dubin@e2m.net

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think before you print



DEPARTMENT OF THE AIR FORCE

AIR FORCE RESERVE COMMAND

30 July 2009

Pat Battista
914 MSG/CE
2405 Franklin Drive
Niagara Falls ARS, NY 14304-5063

Ms. Sandra Doran
U.S. Fish and Wildlife Service
New York Field Office (Region 5)
3817 Luker Road
Cortland, NY 13045

Dear Ms. Doran:

The Air Force Reserve Command (AFRC) and 914th Airlift Wing (914 AW) have prepared a Draft Environmental Assessment (EA) on the proposed *Construction of an Indoor Small Arms Range at Niagara Falls Air Reserve Station (ARS), New York*. The Draft EA was provided to the U.S. Fish and Wildlife Service (USFWS) Lower Great Lakes Fishery Resources Office (LGLFRO) in Amherst, NY on 20 May 2009 as part of the Interagency and Intergovernmental Coordination for Environmental Planning (IICEP) process in accordance with Executive Order 12372, *Intergovernmental Review of Federal Programs*. Per their request, a subsequent copy of the Draft EA was also provided to the USFWS NY Field Office (Region 5) on 16 June 2009. The public and agency comment period for the Draft EA ended on 19 June 2009 with no issues related to Federally-listed species identified.

As discussed in the Draft EA, in 1997, 2001, 2006, 2007, and 2008 the USFWS, LGLFRO conducted surveys for federally and state-listed endangered, threatened, and special concern species, and inventories of the natural communities and habitats on Niagara Falls ARS. The USFWS 2009 *Threatened and Endangered Species Report for Niagara Falls ARS* included additional surveys conducted in September 2008 for reptiles and amphibians. These surveys revealed no reptiles or amphibians in two survey locations in Cayuga Creek. Additionally, there is no mention of the bald eagle as occurring on Niagara Falls ARS in the USFWS Threatened and Endangered species inventories. Although the installation is within the historic range of the eastern prairie fringed orchid, this species has not been observed on the installation during any of the surveys identified above. Therefore, no federally threatened or endangered species have been observed on Niagara Falls ARS.

Based on the previous USFWS surveys discussed above, the USFWS New York Field Office's Section 7 website (<http://www.fws.gov/northeastnyfo/es/section7.htm>); the NY Natural Heritage Program's Rare Animal and Plant lists; and existing habitat conditions on the site of the Proposed Action (undeveloped regularly mowed grassland); no Federal or state listed or proposed threatened or endangered flora or fauna under New York State Department of Environmental Conservation and USFWS jurisdiction are known to occur within the vicinity of the Proposed Action. Therefore, no adverse effects on federally listed species would be expected. If you have any questions or need additional information, please contact Mr. James Mathews of the 914 MSG/CEV at (716) 236-3122.

Sincerely,

P. Battista
PAT BATTISTA
Base Civil Engineer



United States Department of the Interior

FISH AND WILDLIFE SERVICE

New York Field Office
3817 Luker Road
Cortland, NY 13045
Phone: (607) 753-9334 Fax: (607) 753-9699
<http://www.fws.gov/northeast/nyfo>



To: Pat Battista

Date: Aug 6, 2009

USFWS File No: 90452

Regarding your: ☒ Letter ☐ FAX ☐ Email

Dated: July 30, 2009

For project: Indoor Small Arms Range

Located: Niagara Falls Air Reserve Station

In Town/County: City of Niagara Falls / Niagara County

Pursuant to the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*), the U.S. Fish and Wildlife Service:

- ☒ Acknowledges receipt of your "no effect" and/or no impact determination. No further ESA coordination or consultation is required.
- ☐ Acknowledges receipt of your determination. Please provide a copy of your determination and supporting materials to any involved Federal agency for their final ESA determination.
- ☐ Is taking no action pursuant to ESA or any other legislation at this time but would like to be kept informed of project developments.

As a reminder, until the proposed project is complete, we recommend that you check our website (<http://www.fws.gov/northeast/nyfo/es/section7.htm>) every 90 days from the date of this letter to ensure that listed species presence/absence information for the proposed project area is current. Should project plans change or if additional information on listed or proposed species or critical habitat becomes available, this determination may be reconsidered.

USFWS Contact(s): Sandra L. Doran 08-06-2009

Supervisor: L. Juan Date: 08-06-2009

APPENDIX D

CALCULATIONS TO SUPPORT THE AIR QUALITY IMPACT ANALYSES

- Summary** Summarizes total emissions by calendar year.
- Combustion** Estimates emissions from non-road equipment exhaust as well as painting.
- Fugitive** Estimates fine particulate emissions from earthmoving, vehicle traffic, and windblown dust
- Grading** Estimates the number of days of site preparation, to be used for estimating heavy equipment exhaust and earthmoving dust emissions
- Operational Emissions** Emissions from small arms firing.
- AQCR Tier Report** Summarizes total emissions for the Niagara Frontier Intrastate AQCR 162 Tier Reports for 2001, to be used to compare project to regional emissions.

Air Quality Emissions from Proposed Action

	NO _x (ton)	VOC (ton)	CO (ton)	SO ₂ (ton)	PM ₁₀ (ton)	PM _{2.5} (ton)	CO ₂ (ton)
Construction Combustion	5.267	0.557	2.319	0.408	0.378	0.366	597.362
Construction Fugitive Dust	-	-	-	-	3.051	0.168	-
TOTAL CY2010	5.267	0.557	2.319	0.408	3.429	0.535	597.362

Note: Total CY2010 PM_{10/2.5} fugitive dust emissions are assuming USEPA 50% control efficiencies.

	CO (lb/yr)	Lead (lb/yr)
Operational Emissions	15.73	2.26
TOTAL CY2011 and Beyond	15.73	2.26

CY2011 and Beyond

Since future year budgets were not readily available, actual 2001 air emissions inventories for the counties were used as an approximation of the regional inventory. Because the Proposed Action is several orders of magnitude below significance, the conclusion would be the same, regardless of whether future year budget data set were used.

Niagara Frontier Intrastate Air Quality Control Region

	Point and Area Sources Combined					
Year	NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM ₁₀ (tpy)	PM _{2.5} (tpy)
2001	55,425	60,307	321,103	58,441	32,324	7,765

Source: USEPA-AirData NET Tier Report (<http://www.epa.gov/air/data/geosel.html>). Site visited on 19 February 2009.

Determination Significance (Significance Threshold = 10%)

	Point and Area Sources Combined					
	NO _x (tpy)	VOC (tpy)	CO (tpy)	SO ₂ (tpy)	PM ₁₀ (tpy)	PM _{2.5} (tpy)
Regional Emissions	55,425	60,307	321,103	58,441	32,324	7,765
CY2010 Emissions	5.2670	0.5575	2.3189	0.4080	3.4286	0.535
CY2010 %	0.0095%	0.0009%	0.0007%	0.0007%	0.0106%	0.0069%

Combustion Emissions

Combustion Emissions of VOC, NO_x, SO₂, CO, PM_{2.5}, PM₁₀, and CO₂ due to Construction

Includes:

Assumption: Constuction activities would disturb 2 acres onsite and 0.4 acres for installing utilities to the site.

Assumption: Trenches for supporting utility lines would be 3 feet wide.

Assumption: Parking lot would be 0.5 acres (21,780 ft2).

100% of Construct Indoor Small Arms Range	28,374 ft²
100% of Construct Supporting Electric Facility	1,292 ft²
100% of Construct Sidewalks	1,527 ft²
100% of Install Water Line	1,200 ft²
100% of Install Sewer Line	1,377 ft²
100% of Install Natural Gas Line	984 ft²
100% of Install Communication Line	9,843 ft²
100% of Install Storm Water Lines	4,920 ft²
100% Construct and Pave Parking Lot	21,780 ft²
Total Building Construction Area:	29,666 ft²
Total Demolished Area:	0 ft²
Total Paved Area:	21,780 ft²
Total Disturbed Area:	104,544 ft²
Construction Duration:	1 year
Annual Construction Activity:	260 days/yr

Emission Factors Used for Construction Equipment

References: Guide to Air Quality Assessment, SMAQMD, 2004; and U.S. EPA NONROAD Emissions Model, Version 2005.0.0
Emission factors are taken from the NONROAD model and were provided to e³M by Larry Landman of the Air Quality and Modeling Center (Landman.Larry@epamail.epa.gov) on 12/14/07. Factors provided are for the weighted average US fleet for CY2007.
Assumptions regarding the type and number of equipment are from SMAQMD Table 3-1 unless otherwise noted.

Grading

Equipment	No. Req ^d . ^a per 10 acres	NO _x (lb/day)	VOC ^b (lb/day)	CO (lb/day)	SO ₂ ^c (lb/day)	PM ₁₀ (lb/day)	PM _{2.5} (lb/day)	CO ₂ (lb/day)
Bulldozer	1	13.60	0.96	5.50	1.02	0.89	0.87	1456.90
Motor Grader	1	9.69	0.73	3.20	0.80	0.66	0.64	1141.65
Water Truck	1	18.36	0.89	7.00	1.64	1.00	0.97	2342.98
Total per 10 acres of activity	3	41.64	2.58	15.71	0.83	2.55	2.47	4941.53

Paving

Equipment	No. Req ^d . ^a per 10 acres	NO _x (lb/day)	VOC ^b (lb/day)	CO (lb/day)	SO ₂ ^c (lb/day)	PM ₁₀ (lb/day)	PM _{2.5} (lb/day)	CO ₂ (lb/day)
Paver	1	3.83	0.37	2.06	0.28	0.35	0.34	401.93
Roller	1	4.82	0.44	2.51	0.37	0.43	0.42	536.07
Truck	2	36.71	1.79	14.01	3.27	1.99	1.93	4885.95
Total per 10 acres of activity	4	45.37	2.61	18.58	0.91	2.78	2.69	5623.96

Demolition

Equipment	No. Req ^d . ^a per 10 acres	NO _x (lb/day)	VOC ^b (lb/day)	CO (lb/day)	SO ₂ ^c (lb/day)	PM ₁₀ (lb/day)	PM _{2.5} (lb/day)	CO ₂ (lb/day)
Loader	1	13.45	0.99	5.58	0.95	0.93	0.90	1360.10
Haul Truck	1	18.36	0.89	7.00	1.64	1.00	0.97	2342.98
Total per 10 acres of activity	2	31.81	1.89	12.58	0.64	1.92	1.87	3703.07

Building Construction

Equipment ^d	No. Req ^d . ^a per 10 acres	NO _x (lb/day)	VOC ^b (lb/day)	CO (lb/day)	SO ₂ ^c (lb/day)	PM ₁₀ (lb/day)	PM _{2.5} (lb/day)	CO ₂ (lb/day)
Stationary								
Generator Set	1	2.38	0.32	1.18	0.15	0.23	0.22	213.06
Industrial Saw	1	2.62	0.32	1.97	0.20	0.32	0.31	291.92
Welder	1	1.12	0.38	1.50	0.08	0.23	0.22	112.39
Mobile (non-road)								
Truck	1	18.36	0.89	7.00	1.64	1.00	0.97	2342.98
Forklift	1	5.34	0.56	3.33	0.40	0.55	0.54	572.24
Crane	1	9.57	0.66	2.39	0.65	0.50	0.49	931.93
Total per 10 acres of activity	6	39.40	3.13	17.38	3.12	2.83	2.74	4464.51

Note: Footnotes for tables are on following page

Architectural Coatings

Equipment		No. Req ^d . ^a per 10 acres	NO _x (lb/day)	VOC ^b (lb/day)	CO (lb/day)	SO ₂ ^c	PM ₁₀ (lb/day)	PM _{2.5} (lb/day)	CO ₂ (lb/day)
Air Compressor		1	3.57	0.37	1.57	0.25	0.31	0.30	359.77
Total per 10 acres of activity		1	3.57	0.37	1.57	0.07	0.31	0.30	359.77

- The SMAQMD 2004 guidance suggests a default equipment fleet for each activity, assuming 10 acres of that activity, (e.g., 10 acres of grading, 10 acres of paving, etc.). The default equipment fleet is increased for each 10 acre increment in the size of the construction project. That is, a 26 acre project would round to 30 acres and the fleet size would be three times the default fleet for a 10 acre project.
- The SMAQMD 2004 reference lists emission factors for reactive organic gas (ROG). For the purposes of this worksheet ROG = VOC. The NONROAD model contains emissions factors for total HC and for VOC. The factors used here are the VOC factors.
- The NONROAD emission factors assume that the average fuel burned in nonroad trucks is 1100 ppm sulfur. Trucks that would be used for the Proposed Actions will all be fueled by highway grade diesel fuel which cannot exceed 500 ppm sulfur. These estimates therefore over-estimate SO₂ emissions by more than a factor of two.
- Typical equipment fleet for building construction was not itemized in SMAQMD 2004 guidance. The equipment list above was assumed based on SMAQMD 1994 guidance.

PROJECT-SPECIFIC EMISSION FACTOR SUMMARY

Source	Equipment Multiplier*	Project-Specific Emission Factors (lb/day)														
		NO _x			VOC			SO ₂ **			PM ₁₀		PM _{2.5}		CO ₂	
		NO _x	VOC	SO ₂ **	PM ₁₀	PM _{2.5}	CO ₂	NO _x	VOC	SO ₂ **	PM ₁₀	PM _{2.5}	CO ₂			
Grading Equipment	1	41.641	2.577	15.710	0.833	2.546	2.469	4941.526								

*The equipment multiplier is an integer that represents units of 10 acres for purposes of estimating the number of equipment required for the project.

**Emission factor is from the evaporation of solvents during painting, per "Air Quality Thresholds of Significance", SMAQMD, 1994

Example: SMAQMD Emission Factor for Grading Equipment NO_x = (Total Grading NO_x per 10 acre)*(Equipment Multiplier)

Summary of Input Parameters

	Total Area (ft ²)	Total Area (acres)	Total Days
Grading:	104,544	2.40	2

(from "CY2010 Grading" worksheet)

Total Project Emissions by Activity (lbs)

	NO _x	VOC	CO	SO ₂	PM ₁₀	PM _{2.5}	CO ₂
Grading Equipment	83.28	5.15	31.42	1.67	5.09	4.94	9,883
Total Emissions (lbs):	10,533.91	1,114.93	4,637.86	816.07	755.16	732.50	1,194,723

Results: Total Project Annual Emission Rates

	NO _x	VOC	CO	SO ₂	PM ₁₀	PM _{2.5}	CO ₂
Total Project Emissions (lbs)	10,533.91	1,114.93	4,637.86	816.07	755.16	732.50	1,194,723
Total Project Emissions (tons)	5.2670	0.5575	2.3189	0.4080	0.3776	0.3663	597.3617

Construction Fugitive Dust Emissions

Construction Fugitive Dust Emission Factors

	Emission Factor	Units	Source
General Construction Activities	0.19 ton PM ₁₀ /acre-month	MRI 1996; EPA 2001; EPA 2006	
New Road Construction	0.42 ton PM ₁₀ /acre-month	MRI 1996; EPA 2001; EPA 2006	

PM_{2.5} Emissions

PM _{2.5} Multiplier	0.10	(10% of PM ₁₀ emissions assumed to be PM _{2.5})	EPA 2001; EPA 2006
------------------------------	------	--	--------------------

Control Efficiency

	0.50	(assume 50% control efficiency for PM ₁₀ and PM _{2.5} emissions)	EPA 2001; EPA 2006
--	------	--	--------------------

Project Assumptions

New parking Lot Construction (0.42 ton PM₁₀/acre-month)

Duration of Construction Project	3 months
Area	0.5 acres

Construction Activities (0.19 ton PM₁₀/acre-month)

Duration of Construction Project	12 months
Area	2.4 acres

	Project Emissions (tons/year)		
	PM ₁₀ uncontrolled	PM ₁₀ controlled	PM _{2.5} uncontrolled
New Road Construction	0.63	0.32	0.06
Construction Activities	5.47	2.74	0.27
Total	6.10	3.05	0.34
			0.17

Construction Fugitive Dust Emission Factors

General Construction Activities Emission Factor

0.19 ton PM_{10} /acre-month Source: MRI 1996; EPA 2001; EPA 2006

The area-based emission factor for construction activities is based on a study completed by the Midwest Research Institute (MRI) Improvement of Specific Emission Factors (BACM Project No. 1), March 29, 1996. The MRI study evaluated seven construction projects in Nevada and California (Las Vegas, Coachella Valley, South Coast Air Basin, and the San Joaquin Valley). The study determined an average emission factor of 0.11 ton PM_{10} /acre-month for sites without large-scale cut/fill operations. A worst-case emission factor of 0.42 ton PM_{10} /acre-month was calculated for sites with active large-scale earth moving operations. The monthly emission factors are based on 168 work-hours per month (MRI 1996). A subsequent MRI Report in 1999, Estimating Particulate Matter Emissions From Construction Operations, calculated the 0.19 ton PM_{10} /acre-month emission factor by applying 25% of the large-scale earthmoving emission factor (0.42 ton PM_{10} /acre-month) and 75% of the average emission factor (0.11 ton PM_{10} /acre-month). The 0.19 ton PM_{10} /acre-month emission factor is referenced by the EPA for non-residential construction activities in recent procedures documents for the National Emission Inventory (EPA 2001; EPA 2006). The 0.19 ton PM_{10} /acre-month emission factor represents a refinement of EPA's original AP-42 area-based total suspended particulate (TSP) emission factor in Section 13.2.3 Heavy Construction Operations. In addition to the EPA, this methodology is also supported by the South Coast Air Quality Management District as well as the Western Regional Air Partnership (WRAP) which is funded by the EPA and is administered jointly by the Western Governor's Association and the National Tribal Environmental Council. The emission factor is assumed to encompass a variety of non-residential construction activities including building construction (commercial, industrial, institutional, governmental), public works, and travel on unpaved roads. The EPA National Emission Inventory documentation assumes that the emission factors are uncontrolled and recommends a control efficiency of 50% for PM_{10} and $PM_{2.5}$ in PM nonattainment areas.

New Road/parking Lot Construction Emission Factor

0.42 ton PM_{10} /acre-month Source: MRI 1996; EPA 2001; EPA 2006

The emission factor for new road or parking lot construction is based on the worst-case conditions emission factor from the MRI 1996 study described above (0.42 tons PM_{10} /acre-month). It is assumed that road/parking lot construction involves extensive earthmoving and heavy construction vehicle travel resulting in emissions that are higher than other general construction projects. The 0.42 ton PM_{10} /acre-month emission factor for road/parking lot construction is referenced in recent procedures documents for the EPA National Emission Inventory (EPA 2001; EPA 2006).

$PM_{2.5}$ Multiplier

0.10

$PM_{2.5}$ emissions are estimated by applying a particle size multiplier of 0.10 to PM_{10} emissions. This methodology is consistent with the procedures documents for the National Emission Inventory (EPA 2006).

Control Efficiency for PM_{10} and $PM_{2.5}$

0.50

The EPA National Emission Inventory documentation recommends a control efficiency of 50% for PM_{10} and $PM_{2.5}$ in PM nonattainment areas (EPA 2006). Wetting controls will be applied during project construction.

References:

- EPA 2001. *Procedures Document for National Emissions Inventory, Criteria Air Pollutants, 1985-1999*. EPA-454/R-01-006. Office of Air Quality Planning and Standards, United States Environmental Protection Agency. March 2001.
- EPA 2006. *Documentation for the Final 2002 Nonpoint Sector (Feb 06 version) National Emission Inventory for Criteria and Hazardous Air Pollutants*. Prepared for: Emissions Inventory and Analysis Group (C339-02) Air Quality Assessment Division Office of Air Quality Planning and Standards, United States Environmental Protection Agency. July 2006.
- MRI 1996. *Improvement of Specific Emission Factors (BACM Project No. 1)*. Midwest Research Institute (MRI). Prepared for the California South Coast Air Quality Management District, March 29, 1996.

Grading Schedule

Estimate of time required to grade a specified area.

Input Parameters
Construction area: 2.40 acres/yr (from Combustion Worksheet)
Qty Equipment: 3.00 (calculated based on 3 pieces of equipment for every 10 acres)

Assumptions.
Terrain is mostly flat.
An average of 6" soil is excavated from one half of the site and backfilled to the other half of the site; no soil is hauled off-site or borrowed.
200 hp bulldozers are used for site clearing.
300 hp bulldozers are used for stripping, excavation, and backfill.
Vibratory drum rollers are used for compacting.
Stripping, Excavation, Backfill and Compaction require an average of two passes each.
Excavation and Backfill are assumed to involve only half of the site.

Calculation of days required for one piece of equipment to grade the specified area.

Reference: Means Heavy Construction Cost Data, 19th Ed., R. S. Means, 2005.

Means Line No.	Operation	Description	Output	Units	Acres per equip-day)	equip-days per acre	Acres/yr (project- specific)	Equip-days per year
2230 200 0550	Site Clearing	Dozer & rake, medium brush	8	acre/day	8	0.13	2.40	0.30
2230 500 0300	Stripping	Topsoil & stockpiling, adverse soil	1,650	cu. yd/day	2.05	0.49	2.40	1.17
2315 432 5220	Excavation	Bulk, open site, common earth, 150' haul	800	cu. yd/day	0.99	1.01	1.20	1.21
2315 120 5220	Backfill	Structural, common earth, 150' haul	1,950	cu. yd/day	2.42	0.41	1.20	0.50
2315 310 5020	Compaction	Vibrating roller, 6" lifts, 3 passes	2,300	cu. yd/day	2.85	0.35	2.40	0.84
TOTAL								4.02

Calculation of days required for the indicated pieces of equipment to grade the designated acreage.

(Equip)(day)/yr: 4.02
Qty Equipment: 3.00
Grading days/yr: 1.34

Operational Emissions

The Proposed Action is to construct a 28-point live-fire indoor small arms range at Niagara Falls ARS to satisfy certification requirements on the M-16 series rifle, M-9 pistol, M-11 pistol, M-870 shotgun, M-240B machine gun, and M-249 automatic rifle.

Emission Calculation Methods

Separate methods are used to calculate the carbon monoxide and lead emissions from small arms firing.

Carbon Monoxide - CO emissions associated with a particular type of ammunition are calculated by multiplying the number of rounds of ammunition fired times the mass of energetic material (MEM) in each round of ammunition and then times the emission factor for small arms firing, which is expressed in units of lbs/ton explosive.

$$Eco = NR * MEM * (1/7,000) * (1/2,000) * 77$$

Where,

Eco = Emissions of carbon monoxide (lb/year)

NR = Number of rounds of a particular type of ammunition fired during the year (rounds/yr)

QP = Mass of energetic material in each round of ammunition (grains/round)

1/7,000 = Unit conversion factor (1 lb/7000 grains)

1/2,000 = Unit conversion factor (1 ton/2000 lb)

77 = CO emission factor (lb/ton) [Note - the emission factor is from AP-42 and is for the detonation of smokeless powder. The units are pounds of pollutant emitted per ton of explosive detonated.]

Lead - As mentioned above, lead emissions from small arms firing come from the lead compounds (i.e., lead styphnate and/or lead azide) found in the ammunition's energetic material, and from the projectile. Unfortunately, there is currently no method available for estimating lead emissions contributed by the projectile. However, lead emissions contributed from the energetic material can be estimated by assuming all the lead is released when the ammunition is fired.

$$Epb = NR * Qpb * (1/7,000) * [1 - (CE/100)]$$

Where,

Epb = Emissions of lead (lb/year)

NR = Number of rounds of a particular type of ammunition fired during the year (rounds/year)

Qpb = Quantity of lead compounds contained in the ammunition (grains/round)

1/7000 = Unit conversion factor (1 lb/7,000 grains)

CE = Control efficiency of filters, if applicable (%)

Emissions from Small Arms Firing

Ammunition Type	Number of Rounds Per Year	Criteria Pollutant (lb/year)	
		CO	Lead
M-240B - 7.62 mm	18,000	4.61	0.57
M-870 - 12 Gauge (00 buck)	150	0.02	0.01
M-249/M-16/M-4 - 5.56 mm	66,000	10.49	1.32
M-9/M-11 - 9 mm	20,000	0.61	0.37
Total	104,150	15.73	2.26

Emission Factors

Ammunition Type	Quantity of Energetic Material (grains/round) ^a	Quantity of Lead Compounds (grains/round) ^a	Quantity of CO per ton explosive (lb CO/ton explosive) ^b
M-240B - 7.62 mm	46.60	0.22	77
M-870 - 12 Gauge (00 buck)	28.90	0.36	77
M-249/M-16/M-4 - 5.56 mm	28.90	0.14	77
M-9/M-11 - 9 mm	5.50	0.13	77

Sources

^a Air Force IERA Guidance (May 1999), Section 27, "Small Arms Firing", Table 27-1 and Table 27-2.

^b AP-42 (February 1980), Section 13.3, "Explosive Detonation", Table 13.3-1. Carbon monoxide emission factor for small arms propellant (smokeless powder) used.

Niagara Frontier Intrastate Air Quality Control Region

			Area Source Emissions						Point Source Emissions					
Row #	State	County	CO	NOx	PM10	PM2.5	SO2	VOC	CO	NOx	PM10	PM2.5	SO2	VOC
1	NY	Erie Co	2,183	8,149	2,508	2,167	40,737	678	260,803	30,595	20,717	3,458	10,028	45,339
2	NY	Niagara Co	4,309	10,496	1,269	789	5,164	201	53,808	6,185	7,830	1,351	2,512	14,089
Grand Total			6,492	18,645	3,777	2,956	45,901	879	314,611	36,780	28,547	4,809	12,540	59,428

SOURCE:

<http://www.epa.gov/air/data/geose.html>

USEPA - AirData NET Tier Report

*Net Air pollution sources (area and point) in tons per year (2001)

Site visited on 19 February 2009.

Niagara Frontier Intrastate AQCR (40 CFR 81.24)

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